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Story of the Week
Belgium Is a Special Case
Insignificant Market for Air Conditioning
It's Fashionable to Dislike Us
Belgian Cosmopolitanites Explain It
International Fat Boy
Peaceful Pacific

Story of the Week

A U. S. Navy tanker plane (it refuels other planes in mid-air) which is based in England carries this message painted on both sides:

"We give green trading stamps."

Belgium Is a Special Case

Unlike Italy, France, Germany, and England, Belgium does not harbor local manufacturing licensees, or branches, of American fabricating firms.

Therefore Belgium can import what she chooses from anywhere. Hence, here is international competition of a significant nature.

Belgians nowadays choose American automobiles. Formerly they chose American refrigeration and air conditioning equipment. But our industry's grip on the Belgigue market is slipping.

Big reason: neglect, and poor service.

In Belgium, refrigeration equipment must work 24 hours a day, as it should elsewhere in the world. If something goes wrong the importer must rectify it quickly.

So what if that *importeur* is Monsieur Forani, proud Belgian representative of several American firms? He sometimes waits 10 days to several weeks for an advising letter from headquarters in the U.S.A. when he encounters a service difficulty.

German and Danish competitors, in contrast, will send a *personal technician tomorrow* to solve a service problem for him.

M. Forani cites Danfoss, for example, which produces a full line of automatic controls and compressors, *plus service information in five languages.* (This is a Denmark manufacturer.)

American manufacturers rarely translate technical bulletins into foreign languages—which is a hardship on harrassed importers. The headman usually can read English, but not his mechanics.

Another score for the Germans: They can supply antedated methyl chloride and sulphur dioxide condensing-unit

(Continued on Page 14, Col. 1)

How To Break Out of the Business Slump —Cultivate Prosperous Export Market

(Conscience of the Industry Editorial by George F. Taubeneck)

AMERICA supplies the world with air conditioning and refrigeration equipment. But, with a few saluted exceptions, too many American manufacturers have been neglecting this tremendous market almost shamefully in recent years.

Our own domestic business has been so great *up until now* that export markets haven't been properly cultivated. No need to bother with them, too many felt. In fact, all too often they've been treated rather shabbily. They've been getting the leavings, the culls, the obsolete models.

Worse, *the absent treatment.*

Mind you, many areas of the world are relatively prosperous. They aren't suffering from a recession like

(Concluded on Page 16)

NAPC Bulletin

LOS ANGELES—Board of directors of the National Association of Plumbing Contractors, meeting just prior to the opening of the NAPC convention, adopted a resolution to consider a plan of consolidation with the Mechanical Contractors Association.

The resolution will be voted on by the NAPC membership at the closing session of the convention.

The resolution was generally similar to the one passed by the MCA at its annual meeting in May. However, it is said to provide for more "voice" in the merger planning by local NAPC associations.

'Watchdog' Unit Working Well In Dallas, Group Says

DALLAS—A "watchdog committee," set up last April to inspect the quality and safety features of air conditioning equipment installed by members of the Air Conditioning and Refrigeration Contractors Association of Dallas, is working satisfactorily, reports Col. John A. Smith, Jr., executive secretary.

"Only one so-call substandard job has been reported," Smith said. "This turned out to be a very minor neglect on the part of an unsupervised mechanic. The contractor immediately corrected the matter."

The committee was set up, according to Col. Smith, to assure the buying public of the quality as well as the safety of installation of equipment sold by its contractor members.

It judges the installation against the association's own standards for safety and quality, which, Smith says, are above and beyond those required by the city code.

Membership on the three-man committee is changed every month.

The committee is instructed to inspect at least 10 jobs per month being done or completed by members. During the first month of operation at least one

(Concluded on Page 29, Col. 2)

Construction Contracts Set Record In May

NEW YORK CITY — Construction contracts let in May topped $3.4 billion the F. W. Dodge Corp. reported recently. This is a new record volume, just barely shading May, 1957, the previous high month.

Residential construction — homes and apartments — contracts totaled $1.3 billion, up 4% over last May. Commercial and factory building contracts, however, were off sharply. Heavy engineering contracts were down 5%.

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Westinghouse Shows How Electronic Refrigeration May Be Applied

ATLANTIC CITY, N. J.— Westinghouse Electric Corp. is demonstrating "practical applications" of new techniques and materials "promising to take electronic refrigeration out of the laboratory into the realm of practicality," at the National Housewares Show in Convention Hall here.

As illustrations of the designs now possible, Westinghouse demonstrated a device that both cools and heats a baby's bottle automatically, and a mobile hostess cart with both refrigeration and oven compartments.

Chris J. Witting, Westinghouse consumer products vice president, said Westinghouse was not necessarily planning to market either of the new products, but had used them to dramatize the fact that a breakthrough in thermo-electric research was as important in the field of new products as in refrigeration and air conditioning.

In addition to demonstrating the two new products, Westinghouse illustrated a variety of other products susceptible of design with the new methods. These ranged from small items

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ASHAE, ASRE Set for Dec. 1 Merger Votes

Membership of Both Groups To Vote 'In Person or by Proxy'

MINNEAPOLIS — The decision on whether the American Society of Refrigerating Engineers and the American Society of Heating & Air-Conditioning Engineers will merge will be reached Dec. 1, when members of both organizations will vote on the question.

The ASRE will be holding its semiannual meeting in New Orleans on that date. The ASHAE meeting will be a special one (its annual meeting will be held Jan. 26-30 in Philadelphia) set for the same date, for the apparently obvious reason of not permitting the vote of one group to affect the other. No place has been set for the special ASHAE meeting, but it is thought possible that it might be New Orleans.

The membership of both societies will vote on the merger proposal "in person or by proxy." Since both societies are incorporated under the laws of the state of New York, it will require a two-thirds vote of the members *voting* in each society to gain approval for the merger.

Although much of the opposi-

(Concluded on Page 28, Col. 3)

Hot July Predicted For Much of U. S.

WASHINGTON, D. C.— "Above seasonal normal temperatures" will prevail in July for more than half the country, the U. S. Weather Bureau predicts in its 30-day outlook for July.

The above normal temperatures are predicted for practically all of the South and Southwest, the Central Plains States, parts of the Midwest and Eastern seaboard. "Much

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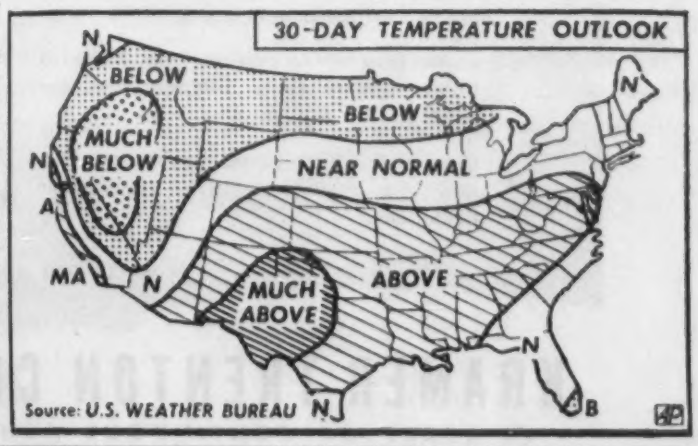

Reentered as second class matter October 3, 1936, at the post office at Detroit, Mich., under the Act of March 3, 1879.
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Dependable Prescription for Refrigeration & Air Conditioning Equipment

℞ Always Specify READING Copper Tubing

Made by Copper Tube SPECIALISTS

READING COPPER BRASS TUBE And RED BRASS PIPE

READING TUBE CORPORATION
EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

Westinghouse Electric Heating Equipment Production Transferred to Staunton, Va.

STAUNTON, Va. — Westinghouse Electric Corp. announced it has transferred the responsibility for the manufacturing and marketing of electric heating equipment from Sunnyvale, Calif., to the air conditioning division plant here effective July 1.

Bruce D. Henderson, vice president in charge of the air conditioning division, said that the transfer was decided upon because "the production and sale of electric heating equipment is more closely associated with the activities of the air conditioning division than with those of the Sunnyvale division."

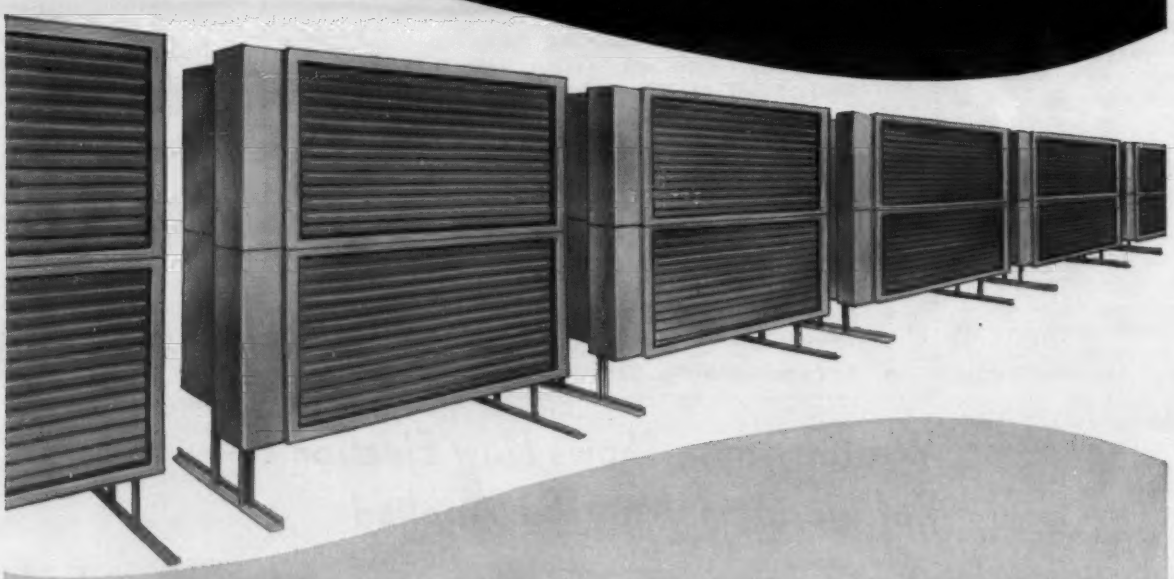
When this transfer is completed, electric heating will be coordinated with the present activities of the division which produces heat pumps, air conditioners, and gas and oil furnaces, Henderson pointed out.

"Another advantage to the move is that it will create greater employment stability here by compensating for some of the seasonal fluctuations inherent in the production of air conditioners," he said. "When air conditioner sales are undergoing a decline as summer progresses, electric heating equipment begins to experience a seasonal upturn."

Henderson said Westinghouse expects sales of the heating equipment to show a strong upward trend in his country.

KRAMER

UNICON for UNLIMITED TONNAGE



Kramer Unicon has brought a new era into the industry. With more than 20 years of unique practical experience and know-how in dry condensing, Kramer again offers new avenues of opportunity to the air conditioning and refrigeration industry.

Unicon now has no capacity limit. Standard Unicon systems up to 540 tons are now cataloged for the first time.

Unicons for heat pump applications are now also available with no horsepower limitations.

Kramer engineering and design has proven that the Unicon can move large volumes of air with extreme quietness.

Unicon has long proven by actual experience that it is free from fouling or corrosion and requires practically no maintenance.

The total operating weight per ton for Unicon is very low, resulting in minimum platform and reinforcement requirements.

Unicon space requirements are surprisingly small; a 300 ton system requires only 15' x 14' floor space and is 12' high.

WRITE FOR BULLETIN U-391

KRAMER TRENTON CO. • Trenton 5, N.J.

44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Admiral Denies Illegality In Pricing Policy

CHICAGO—Denying any illegality in its marketing practices, Admiral Corp. has declared its challenged price differentials and promotional allowances are necessary to meet competition, according to the Federal Trade Commission.

Admiral filed a general denial to the FTC's complaint of March 26 charging the company with unlawfully favoring some retail customers with lower prices and more generous advertising payments over their competitors.

In addition, the concern argues that "the complaint is moot because, as of Dec. 31, 1957, for business reasons not connected with the said complaint, respondent ceased to sell its products to retailers and has no intention of resuming such sales."

Promote Western Show for May, 1959

SAN FRANCISCO—Plans are being promoted for a western air conditioning, refrigeration, heating, and ventilating show in civic auditorium using the new Brooks exhibit hall some time during the first half of May, 1959.

Sponsorship of the show by individuals was announced by Thomas E. Brewer of California Hydronics Corp., San Francisco. Brewer is also editor of *The Fog Dispenser*, monthly publication of Golden Gate chapter, American Society of Heating & Air-Conditioning Engineers.

Lykke-Wilken and Associates are arranging details, Brewer said. Dates for the show will coincide with the ASHAE Region 4 annual meeting to be held in San Francisco next May.

Barton Plans Open House

INDIANAPOLIS — Barton Distributing Co., wholesaler of air conditioning and refrigeration equipment and supplies, announces that an open house will be held Friday and Saturday, July 11-12, to celebrate expansion into new quarters.

HOW DOES HE STACK UP AGAINST COMPETITION?

We show an incongruous situation to illustrate the point that you can't accurately judge an athlete or a product on a solo performance. The compressors and condensing units you are buying now *may* be the best in the world . . . and your percentage of line rejects and field returns *may* be as low as you can reasonably expect.

But without some means of product comparison you can only *assume* that you are getting full measure for your money.

We believe that new Bendix-Westinghouse standards of quality control are giving our customers the best performing compressors on the market today . . . units which many customers report have cut old reject rates as much as seventy-five percent!

Only a trial order can set your mind at ease . . . and that's all we're asking for.

Bendix-Westinghouse

EVANSVILLE, INDIANA

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio
Export Sales: Bendix International, 205 E. 42nd St., New York 17, N.Y.

Reorganization

Coggin Heads Sales, Marketing Group At Detroit Controls

DETROIT — Detroit Controls Div. of American-Standard has reorganized its sales department into a sales and marketing group, W. A. Haist, president, announced recently.

F. G. Coggin becomes general manager, sales and marketing. For the past two years, Coggin has been general manager of sales, and previously headed several sales divisions during his many years with Detroit Controls.

Assisting Coggin as marketing and planning manager will be F. J. Kreissl. Kreissl was formerly manager of appliance control sales, and before that, Cleveland regional manager.

A. L. Fuller, former manager of bronze valve sales, becomes sales manager with direct sales responsibilities.

Under the envisioned marketing plan, however, sales activities will be more concentrated in the regional offices in an effort to bring the company into more intimate relationship with its customers.

W. H. Hohmeyer, formerly market research manager, has been appointed administration manager. His new responsibilities will cover inventory control, customer service, and statistical measurement of sales.

A product planning manager has been assigned to each product class. The product manager will be responsible for the planning, development, and marketing of new products.

F. Y. Carter becomes product planning manager of air conditioning controls, which includes all controls for both refrigeration and heating. Carter formerly was manager of refrigeration sales.

W. C. Dorr, formerly appliance sales engineer, has been appointed product planning manager of appliance controls.

J. F. Page is now product planning manager of "TyniSwitch" products. He has been manager of TyniSwitch sales.

R. W. Miller is the bronze valve product planning manager, including D. T. Williams valves.

H. L. Walker, formerly sales manager of appliance sales, becomes product planning manager of industrial controls. Walker's responsibility also includes "Vernatherm" product planning.

The Army Wanted It In a Hurry

ARMY AIR FORCE C-123 cargo plane waiting to receive a truck load of McCray equipment destined for a commissary at the Strategic Air Command base at Sioux City, Iowa. To meet the opening date deadline, it was decided to arrange an air lift to get the equipment there in time—the first time air transportation had been used to ferry this much equipment to a job. The planes arrived at Baer Field in Fort Wayne, Ind., in the afternoon, stowed away 18 pieces of equipment weighing 5 or 6 tons and delivered them to the Sioux City base a little later that same afternoon.

Expect ARI Standard For Rating Truck Refrigeration by Fall

WASHINGTON, D. C.—Preparation of an ARI standard for testing and rating truck and truck-trailer refrigerating equipment has progressed through several drafts, and is expected to be completed by early fall.

This was announced by Geo. S. Jones, Jr., managing director of Air-Conditioning & Refrigeration Institute, and Henry O. Kirkpatrick, general manager of American Mfg. Co., chairman of ARI's Mobile Air Conditioning and Refrigeration Section.

Drafting of the standard, which will join some 35 other ARI standards for air conditioning and refrigeration equipment of all types, is being accomplished by the Engineering Committee of the Mobile Section, under chairmanship of S. J. Stowell, general sales manager of the Kold-Hold Div. of Tranter Mfg., Inc.

Several meetings have been held by the committee with Fredrick J. Reed, chief engineer of ARI, whose department works with the various sections of the institute in the preparation of standards.

Starr Hull Denies ARW Merger Rumors

COLUMBUS, Ohio—A. Starr Hull, executive secretary of the Air Conditioning & Refrigeration Wholesalers, labeled as "unfounded and ill conceived" a "provoking rumor" that the ARW is discussing a merger with another association.

Stating in a letter to manufacturers that they may have heard of the rumor, Hull declared that no thought has been given to any merger by ARW, "much less any discussion either among ARW members or with any other association.

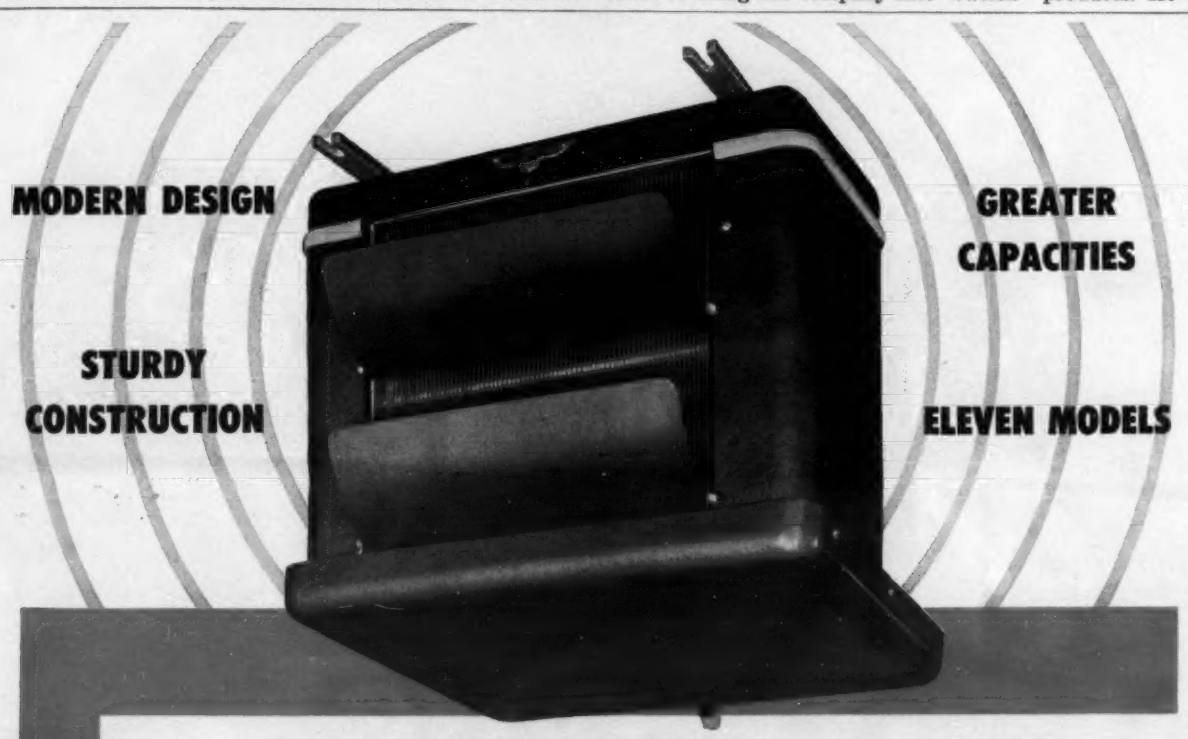
"ARW intends to continue as an association of complete wholesalers who carry complete stocks of air conditioning and refrigeration equipment, parts, and supplies."

Somebody Should Set Gov. Faubus Straight

LITTLE ROCK, Ark. — An automobile dealer has loaned Gov. Orval Faubus an air conditioned automobile to use during his campaign for a third term as governor.

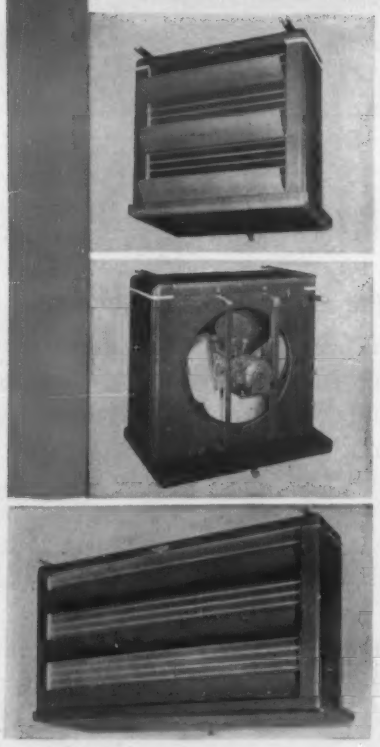
Faubus accepted the car but said he would probably not turn on the air conditioning.

"It isn't good for you to be hopping in and out of an air conditioned car in hot weather," he explained.



WORLD-WIDE ACCEPTANCE

LARKIN HUMI-TEMP LINE



The line of standard Larkin Humi-Temp units has gained world-wide reputation as the accepted standard throughout the industry! Here's why:

Balanced Capacities—Ratings from 2,500 to 48,000 BTU/HR to more nearly balance compressors. Model numbers now designate capacity.

Rugged Construction—to provide a sturdier unit with even greater endurance and accessibility to moving parts.

Many Models—eleven in all, including the husky MT-320 with a capacity of 32,000 BTU/HR at 10° TD and only two fans.

Smart Styling—modern streamlined lines blend with Larkin's own blue enamel to make a truly handsome unit.

Fully Featured—original, high-efficiency cross-fin coil with staggered tubing ... heavily insulated non-sweat drip pan ... rustproof aluminum case ... airplane-type vibrationless fasteners ... adjustable louvres ... slotted hanger bars ... plus the IN-BUILT quality that naturally goes with the name Larkin. UL approved.

Get complete details from your wholesaler or write for bulletin 1049-B.

"Originators of the Cross Fin Coil"

LARKIN COILS INC.

519 MEMORIAL DRIVE, S.E. • ATLANTA, GEORGIA • MUrray 8-3171

What Do They Mean?

Nominal Horsepower Ratings

CHICAGO — In its decision that the Federal excise tax on room air conditioners must be paid on actual horsepower output of the air conditioner and not on its nominal horsepower rating, under present rules, the U. S. District Court here threw some light on this business of nominal horsepower ratings and how they are used.

The court decided in favor of Cory Corp. in its contention that while its air conditioners have a nominal rating of ¾ hp., their actual output was more than 1 hp. Units of 1 hp. or more are not subject to excise tax.

Faced with a severe revenue loss as a result of this ruling, reports are that the Internal Revenue Service plans to plug this loophole soon.

"The assignment of a nominal horsepower rating to a particular motor model is made only by the motor manufacturer, not by the manufacturer of the compressor or of the finished air conditioner," the court said in its findings of fact.

"Although the motor manufacturers have published NEMA standards as a guide to such ratings, they are not required to comply with these standards and feel free to depart from them.

"The manufacturers may assign to any motor such horsepower rating as they chose.

"Whenever a new motor model is designed, the motor manufacturer assigns to it a nominal horsepower rating. Such assignment is made on the basis of specifications before any motor is manufactured or tested and before any motor curve is published.

"A test is made of the first prototype motor manufactured to determine whether it conforms to the design characteristics specified.

"The compressor manufacturers adopt for their compressors the nominal horsepower ratings assigned by the motor manufacturers to the compressor motors and these ratings are affixed to plates fastened to the exterior of the compressor housings. . . .

"Air conditioners of less actual horsepower capacity than plaintiff's (Cory) air conditioners are rated and sold at 1-hp. air conditioners.

"These air conditioners, like plaintiff's air conditioners, contain Tecumseh compressors driven by single-phase, alternating current, 60-cycle, 1,725-r.p.m. induction motors, hermetically sealed for application to an air conditioning unit.

"The motor curves for these motors show a breakdown torque of only 88 and 89 oz. ft. (Cory's units had a breakdown torque ranging between 92.9 and 100.5 oz. ft.)

"The manufacturers of two of the three motors used (General Electric, Emerson Electric, and Delco) guarantee a breakdown torque of only 84 oz. ft. There is no guarantee by the manufacturer of the other motor.

"The manufacturers, who are members of the National Electrical Manufacturers Association, have assigned to these motors a nominal rating of 1 hp., although their actual horsepower capacity is about ⅕ hp. less than the capacity of the nominal ¾-hp. motors contained in plaintiff's air conditioners.

"The manufacturers' rating is reflected in the rating given to the compressors and in turn to the completed air conditioners, which are manufactured and sold as 1-hp. air conditioners.

"On occasion, a motor manufacturer has assigned to a motor a 1-hp. rating and thereafter has changed the rating.

"For example, in 1956, General Electric Co. assigned to one of its motors with a breakdown torque within the ¾ hp. NEMA range, a rating of ½ hp. . . .

"Shortly thereafter, the same company assigned to the same motor a rating of ¾ hp. Said ¾ hp. rating was identified as 'special.' Air conditioning units containing this motor are now sold as ¾-hp. air conditioners.

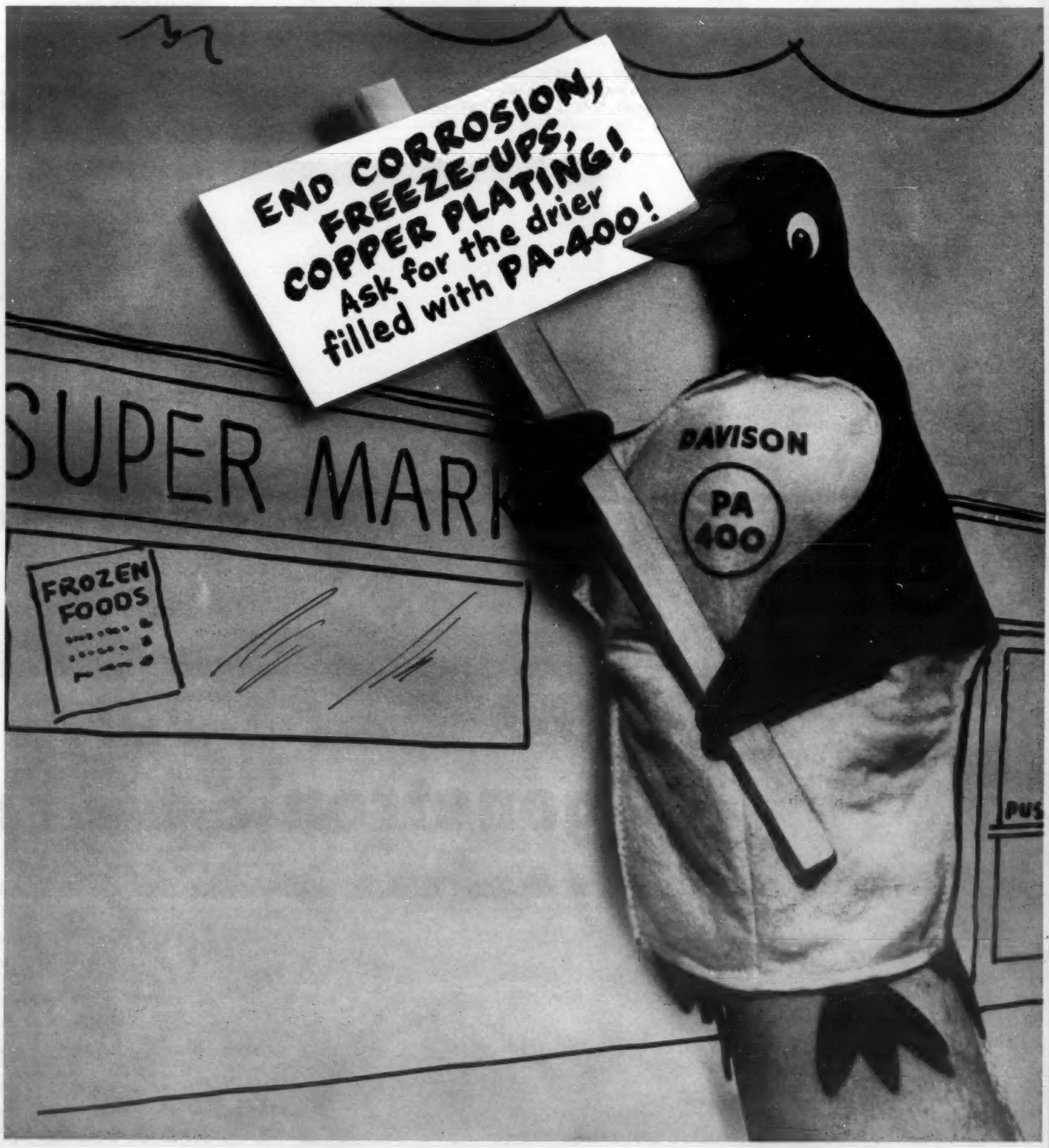
"Factors affecting the horsepower ratings assigned to particular motors, apart from NEMA standards, include motor manufacturers' pricing policies, competition between manufacturers, and varying popular concepts concerning size, power, and current consumption. . . .

"Among engineers, the horsepower of a motor does not mean its nominal horsepower rating, but means the actual horsepower which the motor will deliver continuously under its full normal load," the court found.

In its conclusions of law, the court said:

"The incidence of taxation is a matter of substance, not a matter of form or nomenclature. Determinations of taxability should be based upon ascertainable facts, not upon labels, descriptions, or ratings selected by motor manufacturers.

"The designation of air conditioning units subject to excise tax cannot be delegated to the individual manufacturers of compressor motors nor to a private trade association of by motor manufacturers."



ADSORBS ACIDS. Refrigerants react with water, oils and other contaminants to form acids. These acids attack metals in refrigeration systems . . . cause corrosion, freeze-ups, copper plating. But PA 400® Silica Gel removes moisture *before* it can form acids. What's more, it removes any acids already in the system! So ask for the drier filled with PA 400. Both you and your customers will be happy you did. See your distributor tomorrow.

DAVISON
CHEMICAL COMPANY
Division of W. R. Grace & Co.
Baltimore 3, Maryland

8-Step Sales Plan

Gas Utility Stresses Need for Residential Cooling Salesmen To Work Only on Prospects (Those Willing and Able To Buy)

DETROIT—Eight steps that Ohio Fuel Gas Co. salesmen take to complete an air conditioning sale were outlined here recently by Marion E. Pierce, air conditioning manager for the company.

The steps spell out what the salesman should do from the time he first picks up a lead slip until he goes back to the satisfied customer for more leads.

Under Pierce's system, the salesman should have the signed order in his hand by the end of step 4.

In describing the steps to salesmen of the Michigan Consolidated Gas Co., which is planning a drive for gas air conditioning business in Detroit this summer, Pierce drew a detailed picture of how the Ohio utility goes after home cooling business.

After a fruitless effort to get dealers to sell air conditioning in the face of lower-priced electric competition, the utility took over the sales job itself, Pierce related.

Utility Gives Customer Written Guarantee

Because the utility feels the public will hold it responsible for the performance of gas air conditioning equipment, it has decided to meet the challenge and assume that responsibility in advance, he said. It gives each customer a written guarantee of performance.

In sum, Ohio Fuel Gas makes the sale, calculates the cooling load, engineers the layout, supervises the installation, starts up the unit, balances the system, picks up the service, and backs up the factory guarantee.

Though it retains responsibility in all cases, the utility is willing to farm out some of these functions, Pierce said. It will sell units direct to the user, to a dealer, or to a contractor at a set price including delivery to the site.

If the customer wishes, the utility will make the installation. If not, it will act as prime contractor for others to install or will let the customer handle his own installation.

But no matter who does the job, the utility still checks to see that it is done right and then stands behind it with service, Pierce said.

Free Spring and Fall Checkups

After installation, the customer gets free checkups on his equipment semiannually in the spring and fall.

"Doing this actually saves us time," Pierce said. "The servicemen are not too busy then. After this spring checkup, we know that the filters are clean and everything is adjusted.

"Equipment can reasonably be expected to go through the summer without service. When the cooling season is over, the units are checked again. By so doing, we eliminate most service calls in summer when our servicemen are busy elsewhere," he noted.

Pierce is a strong believer in furnishing salesmen with leads rather than letting them fish around on a cold canvass basis.

"To keep sales costs down and help them make a satisfactory living, salesmen must be used effectively," he said. "They must spend their time calling on real prospects rather than suspects."

Pierce defines a prospect as someone able and willing to buy air conditioning.

"It doesn't pay to waste time on a man who wants air conditioning but can only afford a window fan," he commented.

To get suspects, a bonus of $10 is offered to any utility employe who turns in the name of a suspect who later buys air conditioning. Last year, Pierce said, employes turned in 1,000 names, of whom 100 bought cooling equipment.

FIRST STEP to the sale, he declared, is preparation for the first call. This includes getting the suspect's name, identifying the suspect through the source of the lead, and learning enough about him to believe that he is a prospect—willing and able to buy.

The salesman makes an appointment when both husband and wife can be present. Then he checks his sales kit to be sure sales tools and literature are in order for presentation.

Pierce said his salesmen use an American Gas Association reference manual as a sales kit. To this they add newspaper clippings, trade journal reprints, and other authoritative material they can get to affirm the variety of benefits air conditioning offers.

Emphasize Benefits That Appeal To Prospect

These benefits are tailored to convince a particular prospect of air conditioning's value to him.

For instance, Pierce pointed out, to the young parent or parent-to-be, elimination of diaper rash and longer sleep for the baby are more convincing reasons to buy air conditioning than cool comfort for party giving.

Now the salesman is ready for his first call. This is the SECOND STEP to the sale. Purpose is to qualify the prospect and survey the home.

Qualifying a prospect is a continuous process, he noted. The salesman qualifies as he goes along in order to save his own time when he finds he is no longer dealing with a prospect.

On the first call, the salesman starts by telling the gas air conditioning story. Then he sells the reliability of the gas company, stressing its stability, service, and performance guarantee.

If the prospect indicates he is not yet ready to buy, the salesman thanks him, leaves literature, and informs him that he is always willing to return when the prospect is in the market.

If the prospect shows interest, the salesman then makes a

SO EASY!

genetron® Cylinder Returns...

General Chemical's streamlined program for handling "Genetron" empties makes your cylinder returns *easy* . . . your deposit refunds *fast!* Here's how it works:

You simply return your empty cylinders to the closest General Chemical warehouse, rather than to a producing works.

You receive *immediate* payment by check for the returned empties—deposit refunds being issued *by our local sales office*. Your money gets back in your own pocket in jig time. Refund checks should be in your hands in *not more than one week* from the time the cylinder is received at the warehouse!

Here are the General Chemical receiving points for empty cylinders . . . also the sales offices issuing deposit refunds: →

ASK YOUR WHOLESALER for a supply of cylinder return tags indicating nearest General Chemical receiving point for empty cylinders!

rapid survey of the home. He paces off the dimensions and determines the square footage.

Because home gas air conditioners by Arkla-Servel are made in only two sizes—3.5 and 5-ton capacities, the salesman is told that 1,600 sq. ft. is the dividing line. Below that a 3.5-ton unit is generally adequate. Above that figure, at least a 5-ton unit is needed.

The salesman then determines where the unit is to be located, estimates the duct changes necessary, and figures approximate cost of these changes.

Adding together the known cost of the unit and estimated cost of duct changes, he gives the customer an estimated installed price.

If the price seems too high for the prospect and he convincingly pleads inability to pay, the salesman can bow out at this point. Again, he leaves literature and asks to be called again at a later date.

If the prospect is still interested, the salesman turns to his estimating form. He measures the house accurately and sketches a floor plan showing existing register locations. He fills in all questions on the survey form. Finally, he leaves literature and arranges for a return call as soon as possible with a complete proposal.

Salesman Prepares For Second Call

The salesman now takes STEP 3—preparing for that second call. He calculates heat load from information on his survey form. He requests a credit check on the prospect. He shows a sheet metal man the job and obtains actual cost for duct changes.

Then he prepares his proposal and gets it typed. He obtains his credit approval from the credit department. He rechecks his sales kit and is ready to take STEP 4—the second call.

Purpose of this call is to present his proposal and close the sale. The salesman goes over the ground covered in the first call, summarizing the benefits of gas air conditioning and pointing out product features and how they work.

But he avoids "nuts and bolts"—even the capacity of the unit, unless the customer specifically asks for the information.

"Customers buy comfort, not nuts and bolts," Pierce contends.

The salesman repeats the gas company's service guarantee and presents his proposal, page by page. He then asks for questions and makes adequate explanations.

He then asks for the order. If he gets it, he obtains the customer's signature on the proposal. If the customer has elected to finance the purchase arrangements are made with the local bank and their promissory note, and other papers are signed at this time.

STEP 5 is to bring the gas company's service representative to the home to acquaint him with the job, what the installation calls for, and to set a delivery date.

At STEP 6, he makes a sufficient layout drawing to provide the sheet metal man and the gas company service department with necessary information to insure a proper and complete installation.

At STEP 7 he obtains an installation completion report from the service department.

Call-Back Determines Customer Satisfaction

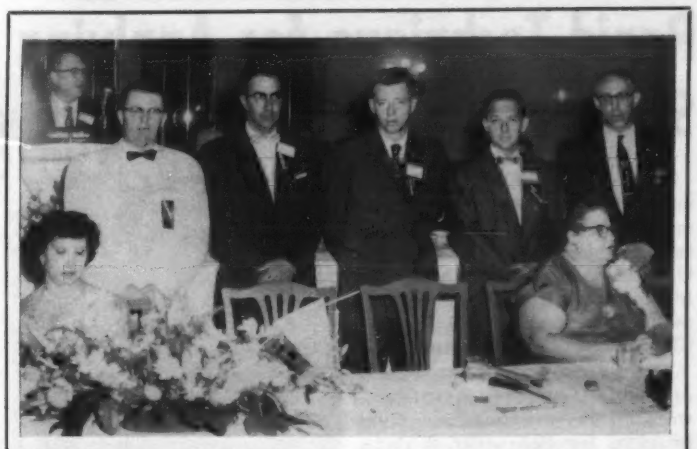
STEP 8 is to call back on the job to check installation and operation of the air conditioner. At this time the salesman explains operating instructions, inspects the installation, determines customer's satisfaction, and asks for prospect leads.

If the order is not obtained at any of the steps described above, Pierce noted, the prospect card file should be flagged for periodic call backs until reason for lack of interest is determined.

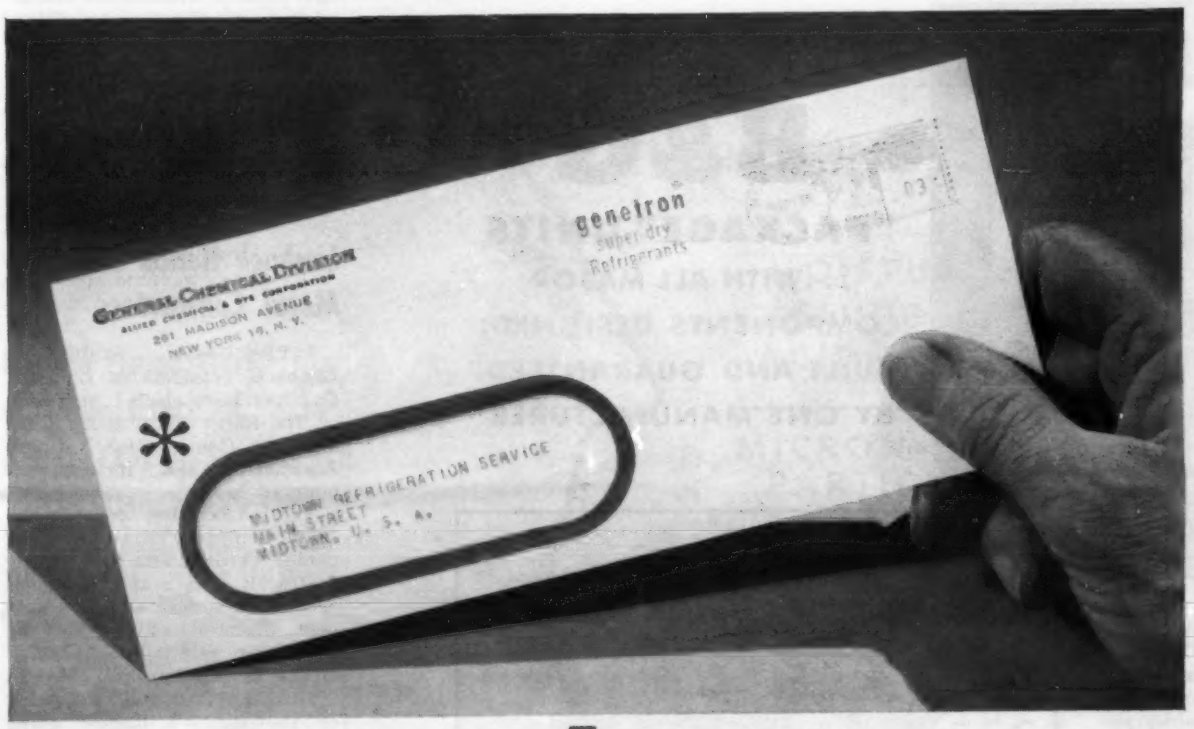
While salesmen are urged to follow these steps, Pierce pointed out, there is nothing to prevent them from getting the order on their first call if the prospect is ready to sign.

In fact, he said, we urge them to close on the first call. We tell them that we will back them on their first estimate of the job if they are close to actual costs.

"We haven't lost on a job yet that was closed on the first call. But we are willing to take the chance to get the order," he averred.



OFFICERS for the regional Refrigeration Service Engineers Society for Arizona, California, Nevada, and Utah, receive the oath of office and are installed by George R. Klahn of San Diego, first vice president of the International RSES (at rostrum). Left to right: Klahn; President Kenneth E. Stookesberry, Los Angeles chapter; First Vice President James W. Roberson, Reno chapter; Secretary Frederic L. Pound, Golden Gate chapter; Treasurer Leo L. Burns, San Gabriel chapter; and Sergeant-at-Arms Al Dellheim, Compton hub chapter. Not present is Second Vice President William J. Fickler, from San Diego chapter. Installation was a banquet feature of 13th annual regional convention, held at Huntington hotel, Pasadena.



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San Francisco, Cal.	San Francisco, Cal.
Denver, Colorado	Denver, Colorado
Bridgeport, Conn.	Bridgeport, Conn.
Chicago, Ill. / Danville, Ill.	Chicago, Ill.
River Rouge, Mich.	River Rouge, Mich.
Minneapolis, Minn.	Minneapolis, Minn.
E. St. Louis, Ill.	St. Louis, Mo.
Albany, N. Y.	Albany, N. Y.
Buffalo, N. Y.	Buffalo, N. Y.
Laurel Hill, Maspeth, N. Y. / Passaic, N. J.	New York, N. Y.
Charlotte, N. C. / East Point, Ga. / Jacksonville, Fla.	Charlotte, N. C.

✓ Receiving Point	✻ Sales Office
Cleveland, Ohio	Cleveland, Ohio
Baltimore, Md. / Camden, N. J.	Philadelphia, Pa.
Pittsburgh, Pa.	Pittsburgh, Pa.
Providence, R. I.	Providence, R. I.
Baton Rouge, La. / Houston, Texas	Houston, Texas
Vancouver, Wash.	Seattle, Wash.
Milwaukee, Wis.	Milwaukee, Wis.

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Westinghouse Appoints Hager & Fox In Lansing

LANSING, Mich. — Appointment of Hager-Fox Heating and Refrigeration Co. here as area distributor for Westinghouse heating and air conditioning equipment and built-in appliances was announced here recently by Westinghouse Electric Corp.

A 3-day open house launched the new distributorship.

Rapid Technique for Applying Duct Insulation Speeds Work on 3 U. of Illinois Buildings

PITTSBURGH—A speed up in insulating and forming sheet metal ductwork for air conditioning systems in three new University of Illinois buildings is said to have resulted from techniques employed by a Champaign, Ill contractor.

Until recently the application of insulating material to ductwork was a time-consuming problem for Schroeder & Sons, heating, ventilating, and air conditioning contractor, according to a report by Jones & Laughlin Steel Corp. here.

"Up to 24 hours were lost while insulating material was bonded under pressure of weights and clamps to sheets coated with asphalt tile cement.

DUCTWORK for the entire air conditioning system in four new buildings at the University of Illinois was fabricated JalZinc.

"This time has been cut to 12 minutes. Working with Goodloe E. Moore, Inc., the Schroeder company discovered a rapid technique for applying insulating material. It is so fast that, once insulated, sheets can be made immediately into ductwork."

"JalZinc" sheets coated with Moore's "Tuff-Bond No. 7"—a quick-drying cement—are rapidly covered with insulating fiber glass in thicknesses from ½ to 1½ in. Within 12 minutes the cement dries and the insulation is on for keeps, the report quotes A. H. Schroeder.

Further speed-ups result because insulated JalZinc sheets can be formed into ductwork without delay, it was pointed out. Sheets with insulation up to 1½ in. thick can be handled in the bending brakes and lockformers used to shape ducts.

The air conditioning systems installed for three Men's residence halls and a food service building at the University of Illinois required over 90,000 lbs. of zinc coated sheets for the ductwork and fan housing sections.

Manufactured by Jones & Laughlin, the JalZinc sheets used in the university jobs ranged from 18 to 26 gage.

Schroeder stated that even with the additional coating of insulation, JalZinc retains its easy lockforming qualities.

The entire mechanical installations for the four new buildings — include 10 penthouse fans, 18 cooling towers, 48 summer exhaust fans, and six air conditioning units — were handled by the Shroeder firm.

Roof Insulation Cuts Heat Gain In Florida Hotel

JACKSONVILLE, Fla.—Heat gain through the roof of the five-story 120-room Ambassador hotel here posed a problem in renting the 30 top-floor rooms when the temperature climbed past 90° F.

Despite the high-efficiency of the $100,000 year-round combined hot and chilled water air conditioning system, H. W. Johnson, manager, reported heat coming through the roof made the top floor "like a Turkish bath."

Johnson and J. W. Connor, hotel engineer, consulted an insulation applicator, who advised 4 in. of mineral wool under the roof deck. Placing this mineral wool blanket created "an immediate and satisfactory" improvement in fifth-floor temperature, Johnson said.

Insulation at a cost of $1,000 reduced winter heating bill by more than $500 annually, Connor estimated. "And we'll be saving that $500 a year for many years to come."

Limbach Heads Sheet Metal Contractors

PITTSBURGH — Walter F. Limbach, president of Limbach Co., has been elected president of The Sheet Metal & Air Conditioning Contractors' National Association, Inc., it was announced here.

The association consists of 1,300 member contracting companies throughout the United States, it was noted. Limbach previously served as vice president, director, and member of the labor relations committee of the association.

Limbach Co., said to be one of the nation's largest sheet metal and air conditioning contractors, has offices and metal fabricating plants in Pittsburgh, and Columbus and Cincinnati, Ohio.

Sun Louvers Allow Use of Smaller Unit In Denver Building

DENVER—Use of windows covered with horizontal outside sun louvers in the new Professional and Business Men's Life Insurance Co. building here permitted installation of a smaller air conditioning system, the architects who designed the structure indicated.

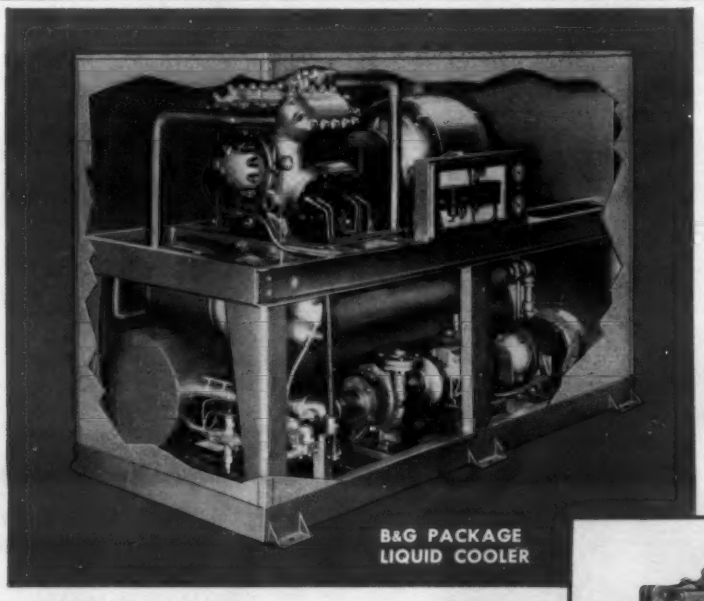
The sun louvers are controlled individually by means of a simple lever handle at each window. A view of the mountains remains, but the problem of sun control is solved.

These exterior louvers are porcelainized with a permanently baked-on finish and can be washed like an automobile.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.



B&G PACKAGE LIQUID COOLER

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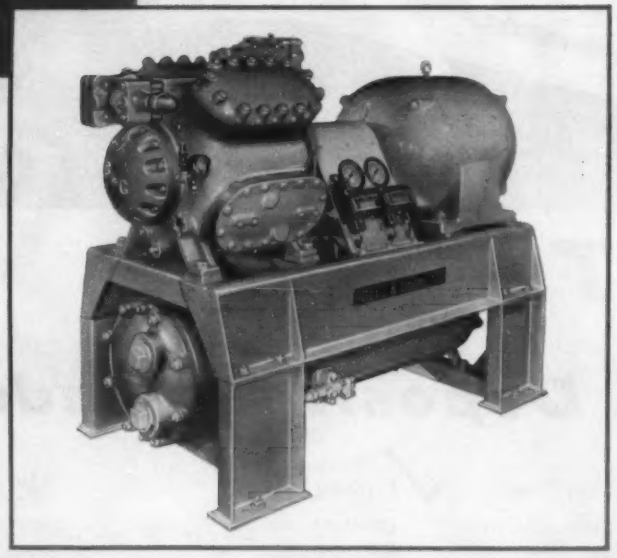
"PACKAGE" UNITS

...WITH ALL MAJOR COMPONENTS DESIGNED, BUILT AND GUARANTEED BY ONE MANUFACTURER



B&G offers a complete line of top quality air conditioning and refrigeration equipment. Many exclusive features have been designed into these products which materially reduce space requirements—improve operating economy—add to life of the equipment.

For a completely integrated and assembled water chiller, the B&G Package Liquid Cooler offers many outstanding advantages. It is equipped with B&G products throughout—the only unit of its kind with *all major components designed, built and guaranteed by one manufacturer!* With this packaged unit, costs which might otherwise be charged against the job are eliminated.

The new Condensing Unit is another "B&G" equipped product—motor, compressor and condenser are all manufactured by Bell & Gossett Company and assembled as a complete unit.

A FULL LINE OF REFRIGERATION AND AIR CONDITIONING COMPONENTS

B&G Condenser

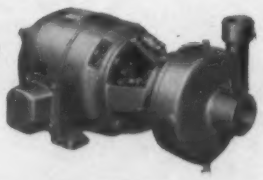
B&G Evaporater

B&G Heat Exchanger

B&G Evaporators and Condensers all offer *plus* values in efficiency and rugged, long life construction. They are built to ASME Code requirements and so stamped.

When selecting pumps, B&G Series 1522 units invite your most critical comparison. Of vertical split-case design and equipped with the leak proof "Remite" Mechanical Seal, its operation is amazingly *silent!* Other B&G centrifugal pumps offer similar features for completely satisfactory performance.

B&G Series 1522 Pump



B&G Series 1531 Pump

Send for complete file of specifications and application data on B&G Air Conditioning and Refrigeration Equipment.

BELL & GOSSETT COMPANY

Dept. FI-47, Morton Grove, Ill.

Canadian License: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

1,200 Homes In Atlanta Development To Get Conditioning

ATLANTA — Residential air conditioning continues to press forward in the Southeast.

Here in Atlanta, central air conditioning will be standard equipment in 1,200 homes to be built in the new College Park Estates. Westinghouse units are planned to be installed in the crawl space and connected with the furnace.

A Westinghouse representative claims this is the first project of this size with homes in the $13,000 to $15,000 price range to have air conditioning in every unit.

Virginia's first completely air conditioned housing development opened recently in Richmond's west end. Carrier heating and cooling units are being supplied to homes in the $21,000 to $23,200 price range.

In Savannah, Ga., Builder Clayton Powell has adopted the policy of including air conditioning in all homes he builds priced at $14,000 and up.

"But," he said, "that adds so much to the cost of the house and people really want it. So we decided to go right ahead and spend another $500 for the equipment."

Mobile Home Unit Catching Fancy of Mfrs., Carrier Says

SYRACUSE, N. Y.—Carrier Corp. reports its new year-round air conditioning system for mobile homes is catching the fancy of manufacturers, with more than two dozen concerns now installing the units in their coaches.

Loren Fletcher, vice president of Carrier and general manager of the Allied Products Div., says the "Mobilemaster" is being placed in the mobile home before it leaves the factory, assuring the purchaser of a home ready for year-round comfort.

In most cases, explains Fletcher, the heating unit alone is installed, with the cooling section added later by the dealer at the request of the buyer.

7 Firms Join NEMA

NEW YORK CITY — Among seven companies which recently joined the National Electrical Manufacturers Association are:

Coolerator Div., McGraw-Edison Co., Albion, Mich., Room Air Conditioner Section—M. F. Beisber, president, voting representative.

Fedders-Quigan Corp., Maspeth, L. I., N. Y., Room Air Conditioner Section, Major Appliance Div., Dehumidifier Section—U. V. Muscio, executive vice president, voting representative.

Kahn & Co., Inc., Hartford, Conn., Adsorption Section—Edwin M. Canner, chief liaison engineer, voting representative.

Thermac Co., Corona, Calif., Automatic Temperature Controls Section—I. E. McKinley, president, voting representative.

Designed by College Women

Medallion Home Is Climate Conditioned for Year-Round Temperature Control by Heat Pump

GREENSBORO, N. C. — A "unique experiment in higher education" was brought to a successful conclusion recently when Mrs. Luther H. Hodges, wife of the governor of North Carolina, officially opened a "Live Better Electrically Medallion Home" here.

The home is climate conditioned for year-round temperature control by a heat pump.

Referred to as the "Woman's College Commencement Home," this tri-level all-electric home was the year-long project of a class in architectural design, within the Art Department of Woman's college, University of North Carolina.

The idea of having a group of 23 non-architecture students design a complete house started with Edward Lowenstein, A.I.A., of Lowenstein and Atkinson, prominent firm of architects, the instructor for the course. The class is made up of junior, senior, and graduate students in the Department of Art and the School of Home Economics.

Duke Power Co., local sponsor of the nationwide Medallion Home program, awarded its "Gold Medallion" for electrical excellence to the Commencement Home at the opening ceremonies.

"This house reflects the latest developments in wiring for full 'Housepower,' all-electric kitchen and laundry, heating by heat pump, and lighting," stated W. B. McGuire, assistant to the president, Duke Power Co., in making the award at the opening ceremony.

To provide a practical approach to his course, Prof. Lowenstein wanted the students to design a house and see it built.

The home is on three levels, enclosing 2,350 sq. ft. of living space. In addition, there is a 484-sq. ft. double carport and a 248-sq. ft. heat pump and storage room.

The home has a 200 ampere electric service entrance, and aluminum electric wiring is used throughout.

The class of 23 women embarked on the "Commencement Home" project last September under Prof. Lowenstein's supervision. The class formed into committees to tackle the various jobs such as design, floor plans, wiring, plumbing, etc.

Two sets of restrictions were placed on the students. One, by the instructor, concerned such things as the family income and size.

The second set was imposed by the builder, Eugene A. Gulledge, and was the more difficult of the two to comply with, it was noted. The builder said that he would put up the house if the students designed something he could sell in Greensboro. He said while the house should contain new and pioneering ideas of layout and design, it should not be so radical as to make it unmarketable.

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EVERYTHING GOES IN . . .

MOISTURE
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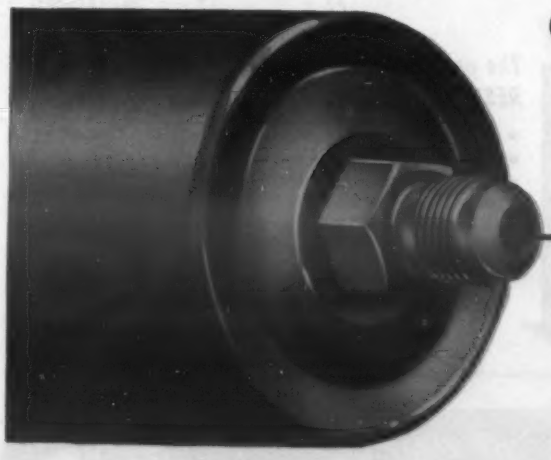
ACID, DIRT

MICRON-SIZE PARTICLES AND REFRIGERANT

BUT ONLY PERFECT REFRIGERANT COMES OUT!



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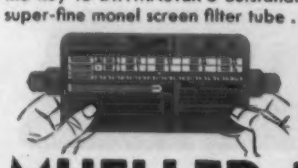
THE NEW Drymaster

is the most perfectly balanced filter-drier you can buy because it gives both superb filtering and superb drying without sacrificing one for the other. Three design features provide the key to DRYMASTER'S outstanding performance . . . "HI-FI" filter block desiccant . . . super-fine monel screen filter tube . . . and inlet distributor disc. There are 34 different sizes in both male flare and solder end connections in a wide range of capacities to fit any job requirement. Available now at better wholesalers everywhere.



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254

Selling Servicing Auto Conditioners Is Dealer's Main Line, But Wholesaling Parts Has Developed Into Brisk Business

Auto Dealers Buy from Him To Save Delay In Ordering from Factory

By George M. Hanning

MEMPHIS, Tenn.—Wholesaling parts for automobile air conditioners is developing into a brisk business for Morris Washer, who operates the Auto Air Conditioning Co. here.

Washer, whose principal occupation is selling and servicing auto conditioners, says wholesaling now represents about one-third of his volume.

REPLICA of trunk style auto air conditioner cools office-waiting room at Auto Air Conditioning Co., Memphis. Jack Clements, service manager, adjusts controls, while Morris Washer, owner, takes a call.

"About 75% of the Memphis automobile dealers now do business with me and even out-of-town dealers are beginning to come in for parts," Washer declared. Why? Principal reason is availability, Washer believes. He carries a large stock of parts for various makes of automotive air conditioning units. It is easier for a dealer, at times, to come to him and buy a part than to order it direct from the factory.

It Takes an Expert To Know Which Part

A dealer can usually get a part immediately from Washer. He may have to wait weeks for one to arrive from the factory.

Another powerful reason is that the bewildering aggregation of specialized parts cannot be sold over the counter by an untrained clerk.

"You have to be a refrigeration as well as an automobile mechanic to sell them," he commented.

"Auto cooling unit manufacturers use so many different models of parts and components making it hard to tell what the customer needs without knowing the model, serial number, and year of the air conditioner, and what make of car it is installed on. In some cases you need to know whether the car has power steering or standard steering in addition to knowing the horsepower of the engine.

"Manufacturers' catalogs generally are so sketchy that you can't tell from looking at them precisely what part to order.

"Some manufacturers, for instance, use three different compressors on a single model of their air conditioners. You'd never know it to look at their catalogs. Only by knowing the model number of the compressor can you tell which one to order."

Replacement Compressors Is Growing Phase

An important segment of Washer's wholesaling business—one that continues to expand rapidly—is replacement compressors. He has a distributorship with Prior-Southwest, Inc. of Dallas, Texas that permits him to exchange compressors over the counter. Prior rebuilds Tecumseh compressors for all makes and he carries a popular assortment for exchange.

"One of the biggest problems in this industry is the wide variety of compressors and mounts used on auto air conditioners," Washer explained. Most manufacturer's compressor mounts are different from the others. It's just not practical to stock them all."

Washer has been an independent dealer in auto air conditioners for about a year now. Working in commercial refrigeration and air conditioning for a living, he kept up his interest in auto cooling. In 1955, he formed a partnership to distribute A.R.A. units.

When the partnership broke up last year, he went into business for himself. He now distributes "Frigiking" units but installs and services all makes, and provide room to work on their refrigeration units.

Last year he built a building on a triangular corner at Madison and Marshall Sts. near downtown Memphis. Into it he incorporated a few of his own business-building ideas.

Ceiling High Enough To Allow Work on Trucks

The work area is largely surrounded by glass, giving mechanics plenty of natural light—particularly north light—to work by. Ceiling is high enough to accommodate large trucks and provide room to work on their refrigeration units.

Special feature is the comfortable waiting room for customers.

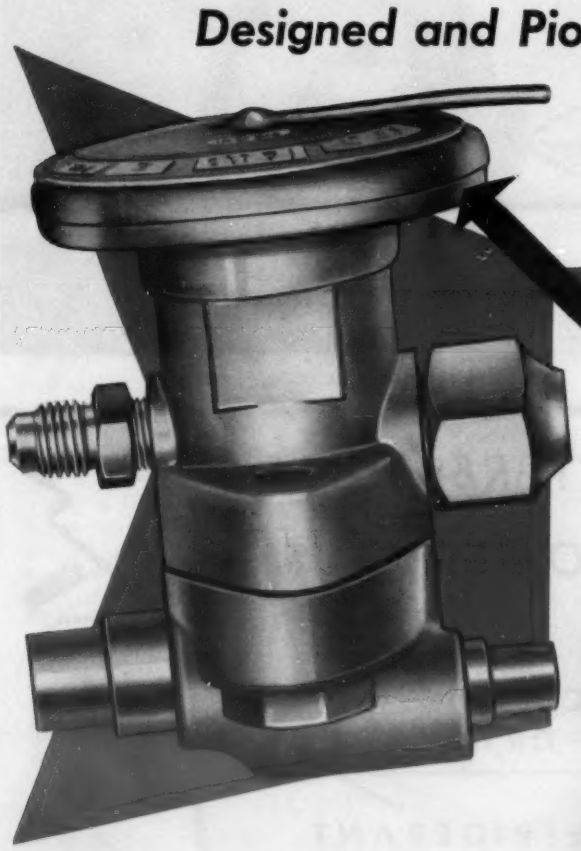
"It is my belief that a clean, comfortable waiting room is important in this business," he declared. "Customers appreciate a place where they can sit down and relax while work is being done on their cars."

With this in mind, Morris insulated the office to eliminate shop noises as much as possible. He outfitted it with comfortable chairs and cooled it with an automobile air conditioner housed in an oversized replica of a trunk unit casing.

(Concluded on next page)

2 MORE IMPORTANT CONTRIBUTIONS TO THE REFRIGERATION INDUSTRY

Designed and Pioneered by ALCO



1 The new Alco designed CONTOUR POWER ASSEMBLY

Reduces extreme and unnecessary flexing of the diaphragm. Increases diaphragm life as much as 10 times over other designs. Standard construction on all ALCO "T" Series and "HTL" Valves.

2 The new Alco designed RAPID RESPONSE REMOTE BULB & WELL

- Reduces danger of floodback
- Extra-quick closing response
- Better control over wider range of operating conditions
- Economical to install in package units
- Available on all Alco Gas Charged Valves if specified.

Look to Alco for advances in refrigerant controls.

Call your Alco wholesaler. Write for Bulletin No. 171-4.

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• BUY QUALITY
• BUY ALCO

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The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

WASHER STUDIES NEWS' article on "Servicing Auto Air Conditioners" for new information. He files every article of the series in the notebook on the desk and keeps it handy for reference.

Auto Air Conditioner Service--

(Concluded from preceding page)

"As long as we are selling automobile air conditioning, we might as well make the most of it," Washer said. "The office unit catches the eye. It is unusual enough so that customers remember it," he added.

In his shop, Washer has been able to install from eight to 10 air conditioners a day. At peak season, five to seven men work on installations and service.

Use Refrigeration and Auto Mechanics

They will include both auto and refrigeration mechanics. The auto mechanic, being familiar with cars, is better at installing units, but an experienced refrigeration man usually makes a better service man.

A licensed refrigeration engineer himself, he stresses in his advertising that "a refrigeration engineer is on duty here."

Washer came by his interest in automobile air conditioning early. He admits to playing with auto cooling since 1942. He claims to have owned one of the first air conditioned cars in this part of the country back in 1944. It was equipped with a unit of his own design.

He favors telephone book advertising over other media. That is the first place a person interested in buying a unit or having one serviced will look, he says.

During the winter season, when public interest in air conditioning lags, Washer takes on some motor tune-up work and employs an electronic rattle finder to bring in body tightening business. This helps keep a skeleton crew busy.

If he had it to do over again, Washer mused, he would combine his auto air conditioning business with a gasoline service station or some such high traffic enterprise.

"You need that continual flow of traffic into your place of business," he believes, "to really sell air conditioners and provide an income during the off season.

Springfield Contractor Group Publishes Roster In Large Newspaper

SPRINGFIELD, Ill.—A roster of the 15 members of the Springfield Air Conditioning & Refrigeration Contractors Association was published recently in a large advertisement appearing in the *Illinois State Journal*, local newspaper.

The ad said: "These are the members of your Springfield Air Conditioning & Refrigeration Contractors Association. They are qualified members of a national professional organization dedicated to serve your needs for air conditioning and refrigeration sales and service."

Officers were listed in large bold type. Then each member and his firm was listed below.

Holsclaw Display Carton Includes Product Data

EVANSVILLE, Ind. — Holsclaw tube benders are now being shipped in a new, re-designed display carton which is bright blue and yellow with black lettering to make its products easily identified on the shelf, Holsclaw Bros., Inc., recently announced.

This carton can be displayed on the jobber's counter "as it will call the customer's attention to the product and give him complete information pertaining to Holsclaw's bending tools," the company noted.

Holsclaw's "Handy" tube benders are manufactured in a range of sizes from ⅜-in. o.d. through 1⅛ in. and will bend hard or soft copper, aluminum, and steel tubing or iron pipe, it was pointed out by the manufacturer.

New U. S. Guide Covers Procurement Practices

WASHINGTON, D. C.—The Small Business Administration has recently published a 106-page "U. S. Government Purchasing and Specifications Directory" providing information on government purchases of military and other types of items.

Priced at 55 cents per copy, the booklet can be obtained from the Government Printing Office, Washington 25, D. C.

Sizer Heads Toledo RSES

TOLEDO—New officer slate for the local chapter of the Refrigeration Service Engineers Society includes Paul Sizer, president; Ray Helminski, vice president; Tom Tomasello, secretary-treasurer; and Fred Katz, sergeant-at-arms.

Plastics Exposition Set For Chicago Nov. 17-21

CHICAGO — For the second time since last December when initial exhibition space drawings were held here, increasing industry demand has forced The Society of the Plastics Industry, Inc. to increase the total number of exhibit booths available in the 1958 National Plastics Exposition to be held here Nov. 17-21 in the International Amphitheatre.

This was announced by John J. Bachner, Exposition committee chairman and president of Chicago Molded Products Corp.

The number of companies exhibiting in Chicago now totals 187, Bachner stated. He pointed to "unprecedented exhibitor interest" as an indication that the November Exposition and National Plastics Conference will attract a record attendance.

fastidious

How to keep the Fountain of Youth from Aging...

Lewin-Mathes Seamless Copper Tube and Pipe showers its benefits in a pure, steady stream on a little girl. And decades later, it will show equal regard for her grandchild.

Through the years, the Lewin-Mathes installation performs like new without maintenance because—as Copper Tube *Specialists*—we build Copper's resistance to everything except flow. Lewin-Mathes' fastidious-minded inspectors — at every operation throughout our *completely integrated plant*—demand shiny smooth surfaces *inside* as well as outside our products.

When installing piping materials, be sure that your *first* cost is your *last* cost. Ask your architect, designer or engineer to specify Lewin-Mathes.

LEWIN MATHES
SAINT LOUIS, MISSOURI
COPPER AND BRASS TUBE PIPE AND ROD
DIVISION OF CERRO DE PASCO CORP.

Hanscom Field Air Conditioning Plays Vital Role In Air Defense, Research Facilities

BEDFORD, Mass. — Worthington air conditioning equipment installed at Laurence G. Hanscom Field here plays an important role in maintaining the air defenses of the northeastern section of this country.

This equipment is also instrumental in the vital electronics, geophysics, and human engineering research programs that are carried on continually in two large research labs at this facility.

Laurence G. Hanscom Field is the location of the prototype SAGE Center (Semi-Automatic Ground Environment), duplicates of which will eventually encompass the entire U. S., standing ready 24 hours a day to protect our country against any enemy air or missile attack.

The center of SAGE operations at this base is a windowless, concrete structure equipped with delicate electronic computing equipment. Information is relayed to this station from offshore "radar posts," enabling the Air Defense Command to dispatch jet interceptors quickly and to the right area.

"In order to assure continual and efficient operation of the electronic computers it is necessary to dissipate the high heat load that is generated by the equipment," it was pointed out by Worthington.

"At the same time the area must be kept clean of dust. The presence of heat or dust would quickly make the equipment inoperative, which in turn, would cause a breakdown in our air defense line. Only by air conditioning could this problem be solved."

Laurence G. Hanscom field is also one of the largest research centers for development of electronic equipment for the air force, as well as investigation into the phenomena of upper atmosphere and better weather forecasting techniques.

"Located here is Lincoln Laboratories which is affiliated with the Massachusetts Institute of Technology and monitored by the Cambridge Research Center," it was noted. "In these labs electronic computing equipment, once again, is vital in conducting experiments in the areas outlined above. And once again, air conditioning is a must to provide cooling and dust control."

Located in a central power plant remote from the SAGE operations center and the research buildings are two steam-driven 750-ton Worthington centrifugal compressors providing 1,680 g.p.m. chilled water from 52.5° F. to 41.5° F. The chilled water passes through underground 10-in. and 12-in. pipes to air handling units located in the conditioned spaces.

The first Worthington centrifugal machine was installed approximately four years ago and has worked continuously except for an occasional shutdown for condenser tube cleaning. The second machine was installed recently.

When the first centrifugal was installed Buerkel & Co., Boston, was the engineer and James S. Cassedy Co., Cambridge, Mass., was the mechanical contractor. On the second machine, Cleverdon, Varney & Pike, Boston, was the engineer and Power Piping Corp., Cambridge, was the mechanical contractor.

Duplexing Suggested

Drayer Hanson Offers Air-Cooled Condensers Up to 25 Tons Capacity

LOS ANGELES—Announced by Drayer-Hanson's manager of Air Conditioning and Refrigeration Div., C. W. Pollock, is the broadening of the range of air-cooled condenser sizes now being offered by this manufacturer to include single unit capacities up to 25 tons; by duplexing, to larger tonnages.

"Units operate on the draw-thru principle which assures full, uniform use of coil and an easy cleaning operation of finned surfaces." the announcement said. "They are self-contained, remote types for ceiling or wall suspension—indoor or outdoor.

"Designated ACC Series-2000, the new D-H air-cooled condenser sizes 10, 15, 20, and 25 tons are belt-driven—a feature of which is slow-turning fan which may be turned to slower speeds, thereby controlling the noise factor even more. Three, 5, and 7-ton units are direct driven.

Named as exclusive feature is total enclosure of motors; also, use of a protective coating of rust-inhibiting "Rust-Oleum."

Electronic Security Device Plant Will Be Air Conditioned

DANBURY, Conn. — Construction has started here on a one-story, air conditioned factory building to house Mosler Research Products, Inc., an affiliate of Mosler Safe Co.

Martin S. Coleman, M.R.P. president, said the new plant will increase production of the firm's line of electronic and electrical security devices. It will also consolidate operations which are presently in four separate Danbury locations.

The Connecticut firm complements the safe company's physical protective devices with electronic alarms and monitoring equipment. The building will include offices, laboratories, and production facilities.

Pyramid Electric To Air Condition Plant

DARLINGTON, S. C. — The 250,000-sq. ft. factory building formerly occupied by Darlington Mfg. Co., which went out of business in December, 1956, will be air conditioned for occupancy by Pyramid Electric Co., a new electronics plant here that is scheduled to reach an eventual employment peak of 1,000 to 1,200 persons.

The new Darlington plant will manufacture radio and television condenser parts. Pyramid Electric's home office is in North Bergen, N. J.

FOR BOTH R-12 and R-22

Use only one water valve

Penn "All-Range" Water Valve Reduces Your Inventory

Easy to adjust with service wrench, not with fingers, thus tampering with adjustment by user is discouraged.

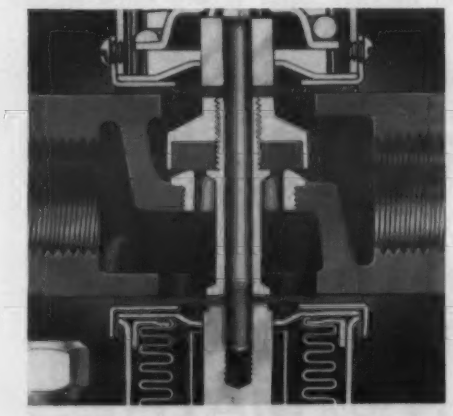
Now, cut your water valve inventory in half! Stock only one model . . . the new Penn 246 "All-Range" water valve . . . it's perfect for *both* R-12 and R-22 service.

This new model has all the superior features of the Penn 246 . . . no valve chatter; no water hammer; no corrosion of sliding parts; easy manual flushing; highly sensitive yet accurate . . . all features which make it *stay on the job longer!* Available in ⅜", ½" and ¾" sizes.

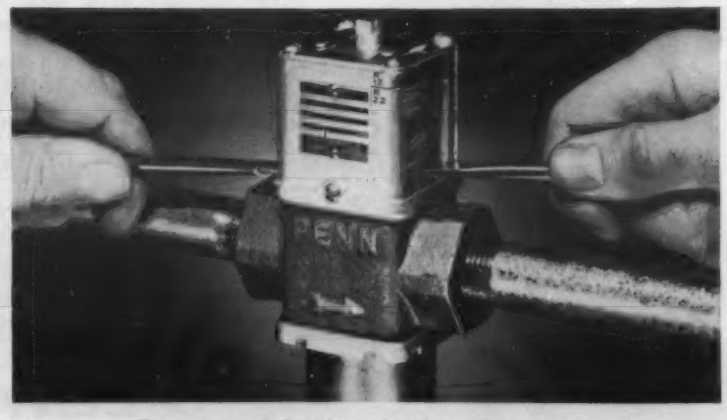
Ask your wholesaler for Penn . . . the refrigeration industry's *favorite water valve.*

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.



No rust, corrosion and sedimentation. Exclusive design keeps water away from bellows, range spring and sliding parts.



Easy manual flushing after installation . . . 2 screwdrivers, an upward lift and foreign matter is washed away to assure proper valve seating.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

New Refrigerated Moisture Traps Aid Vacuum Coating

PHILADELPHIA—Humidity, the enemy of efficient vacuum coating operations, has now been routed by a new series of refrigerated moisture traps, according to F. J. Stokes Corp., manufacturer of vacuum metallizing equipment.

Introduced by the company's Vacuum Equipment Div. for use with its own and other makes of vacuum metallizing equipment, these compact, low cost units are a result of recent developments in refrigeration engineering.

They produce sufficiently low temperatures to condense atmospheric water vapor to ice during that place of operation most affected—the fine pumping portion of the coating cycle, the company claimed.

Problem Most Acute In Late Spring, Summer

The presence of moisture in the atmosphere is an especially acute problem in the late spring and summer months, leading to excessively long pump-down cycles.

Units which in dry weather will regularly operate on 15-minute cycles, for example, may require as much as 30 minutes and more to pump down to the necessary 0.5 micron level during humid weather.

These extended cycles have presented a serious problem to those concerned with the efficiency of vacuum coating operations.

The difficulty arises from the extra pumping load which water vapor imposes on the *diffusion* pumping system.

The moisture—present on the interior surface of the vacuum chamber, on the pieces to be coated, and on the work-holding fixtures—can best be handled by condensing the water vapor to ice before it reaches the diffusion pumping system.

Some vacuum coaters have installed liquid nitrogen traps at various locations within the vacuum chamber or at pumping ports. But nitrogen is an expensive medium to use, difficult to handle, and not always readily available.

Moreover, no satisfactory method is known for defrosting such traps and recycling the nitrogen.

Mechanically refrigerated moisture traps, on the other hand, provide a simple and inexpensive way of removing the water vapor from the system and shortening the pump-down time, the company claimed.

In fact, Stokes points out, the entire capital investment required for such a trap is roughly equivalent on one year's cost of using expended liquid nitrogen.

Moisture Trap Described

The Stokes moisture trap consists of a cooling coil for each diffusion pump. Each cooling coil is incorporated in an adapter flange installed between the diffusion pump and the high vacuum valve.

A compact, low temperature compressor supplies refrigerant to the coil to maintain its surface temperature at -115° F. or lower, low enough to keep moisture trapped as ice down to filament "flashing" pressures.

By installing the cooling coils in the high-vacuum portion of the system between the high-vacuum valves and the diffusion pumps, the coils will never be exposed to atmospheric or roughing pressures—where they are not needed—and ice build-up will thus be minimized.

In this location, also, the cooling coil cannot be "seen" by the tungsten filaments which are heated to produce the metal-vapor for coating. Thus, no heat is radiated to the cooling coil during "flashing."

Moisture traps installed within the chamber or in the manifold, on the other hand, have sometimes caused difficulty during the "flashing" period because of the pressure-burst created by vaporizing ice due to heat from the filaments.

Through an exclusive Stokes feature, ice can be removed from the coil in a matter of minutes by re-cycling hot gas from the compressor through the coil.

This procedure is recommended in preference to defrosting by subliming or allowing the ice to melt off of its own accord.

The water thus removed passes through the hot diffusion pump in vapor form. It ends up in the oil of the mechanical pump, just as in conventional operation.

The high limiting fore-pressure tolerances of the Stokes "Ring-Jet" booster pump, however, permits continuing pumping efficiency.

Distributor Sales for April Up 5% Over 1957 and 28% Over March Total

WASHINGTON, D. C.—April sales of air conditioning and commercial refrigeration equipment distributors were up 5% from the same month of 1957 and rose 28% compared with March, 1958, according to a report by the Bureau of the Census.

Their sales for the first four months of this year, however, were down 2% from the like year-ago period. End-of-April inventories declined 8% compared with April 30, 1957, and were 1% less than at the end of March.

Sales of plumbing and heating equipment and supplies distributors in April were 10% under the year-ago level but gained 9% compared with March. For the first four months of 1958, their sales were off 10% from the corresponding period of 1957. Inventories at the end of April were down 6% from a year earlier and 1% from the end of March.

April sales of all types of merchant wholesalers as a group increased 4% compared with March but were 6% below April a year ago. Sales for the first four months of 1958 were 9% below sales in the comparable 1957 period.

SEND FOR REPRINTS

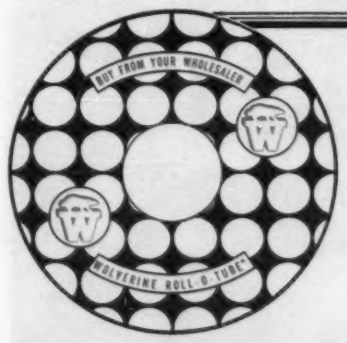
Product Knowledge, Protective Maintenance, Trouble-Shooting, Adjustment, Repair of Electric Motors.

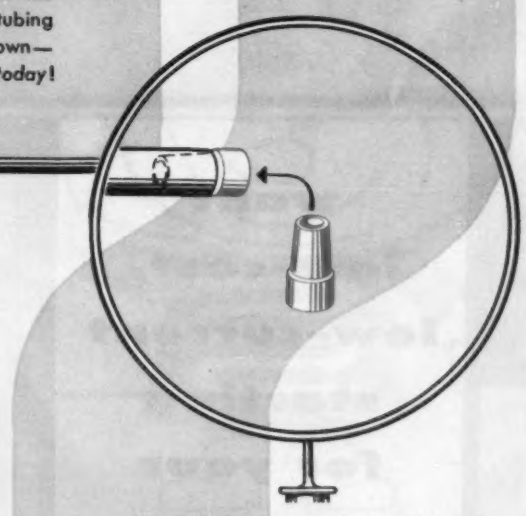
Only 40¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

how about an order?

Illustrated below, Mr. Wholesaler, are two product features designed by Wolverine Tube to help you keep your refrigeration customers happy—*and coming back*. Each feature is the result of Tubemanship—has back of it all the experience, research and sound engineering that has made Wolverine a leader in the tubing industry. You can recommend and sell Wolverine tubing with the sure knowledge that it will stand up—not fall down—on the job. That's why we're asking you for your order—*today*!





WOLVERINE ROLL-O-TUBE®

Here is rigidly quality-controlled refrigeration tube in the round carton that can be used as a reel, rolled like a hoop and easily carried by its convenient center hole. Unused tube always remains in the sturdy Roll-O-Tube carton protected against damage and dirt until needed again. Wolverine refrigeration tube is:

- Plug drawn to insure a mirror-like inside finish
- Annealed in a reducing atmosphere to insure a bright surface
- Dehydrated for moisture removal
- Thoroughly inspected on both inside and outside
- Sample tested for grain size
- Consistent in temper
- Easy to bend

This is Wolverine's exclusive tube seal—a plastic plug that:

- Gives positive protection—seals out moisture and dirt
- Is easy to insert and withdraw from the tube
- Can be used again and again
- Permits the tube to be easily inserted through partitions, etc. (its outside diameter is the same as the tube!)

CALUMET & HECLA, INC.
CALUMET DIVISION
URANIUM DIVISION
GOODMAN LUMBER DIVISION
WOLVERINE TUBE DIVISION
In Canada:
CALUMET & HECLA OF CANADA LIMITED
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PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES

EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK 16, NEW YORK

AROUND THE WORLD IN 50 DAYS

"Inside Dope" by GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)

replacements within hours.

And hardly any European employeur will buy new equipment when he can keep his old stuff alive awhile longer.

In Europe it's considered a sin to tear down any building, or discard still-operating machinery. Obsolescence is strictly an American phenomenon.

Several "syndicates" (Unions) operate powerfully in Belgium within the refrigeration industry. Included are a Manufacturers' Union (Chambre Syndicate du Froid) and a worker's union (U.B.F.).

Hence American enterprises often get short shrift here because these Unions tend to be anti-American, politically, as is the case in much of Europe.

Mr. Forani's plea to American exporters: "Send us technically-equipped servicemen, rather than salesmen. We *want* to buy your products. Even more, we must be able to *service* them quickly."

Insignificant Market for Air Conditioning

As in most nations of the world, air conditioning in Belgium is a factor only in factories. Perhaps 5% of the total Belgian air conditioning installations is put into hotels, clubs, and bars. The remainder (and the TOTAL is tiny) goes into industrial processing.

Household and commercial refrigeration is a ratrace. For example: Three Frigidaires (British, French, and German) are imported here. Kelvinator, Westinghouse, G-E, Hotpoint, and Norge are sold in Belgium. Also Philips of Holland, Bell Telephone's Frigibell, and assorted Italian and German labels.

Repeat: In Belgium he sells best who services quickest. And as of this moment, the Germans are on the ball fastest with the mostest.

In addition to M. Forani, the following Belgian subscribers to AIR CONDITIONING & REFRIGERATION NEWS were useful:

Jean Dens and H. Marmelstein of General Motors Continental, Henryk De Haes of Etablissements De Haes, Brud Bockstael of Ateliers De Constrcts Basile, and Marcel Peres of Codis Pays-Bas.

It's Fashionable to Dislike Us

Just why Europeans in general don't like Americans in general is hard to pin down. But they don't, and repeated discovery of that unhappy fact distresses and bewilders U. S. citizens who travel overseas.

In part this attitude is based on wrong notions (our movies give them reason to think we're all either filthy-rich or simple cowboys). In frighteningly larger part, false impressions of the United States are based on downright lies and misconceptions. Examples of the latter:

(1) An otherwise intelligent and highly successful French businessman (a Catholic, incidentally) argued throughout a two-hour luncheon that American foreign policy "is too stubborn because John Foster Dulles is a Jesuit, and the Society of Jesus has rigid and inflexible principles." Dulles is a Presbyterian elder.

(2) The widespread belief in France, Spain, Belgium, Turkey —all through the Middle East, in fact—that U. S. oil interests are financing the Algerian rebellion because *Texas* intends to annex all oil-producing nations, including Arabia-in-general. How silly can they get?

(3) Near universal acceptance of the canard that Americans have no ethics if dollars are involved. Thus, all our foreign aid programs are suspect. "We'd sell our poor old grandmothers for a buck apiece" is a hoary old can of corn accepted smirkingly as *a truism* all over Europe.

Belgian Cosmopolitanites Explain It

One wondrously interesting night in Brussels we kicked around this subject ("Europeans despise America") in the home of a fascinating Belgian family. Let's tick off the cast of characters:

Father Forani: an erudite Belgian importer of American, British, German, and Danish refrigeration products.

Mother Forani: a photographer and sculptress whose artistic contributions were prominent at the Brussels World Fair.

Ludmilla Forani: teen-age daughter who had spent 10 months in Milwaukee last year as an "exchange student."

Isabella Forani: younger daughter who studied in England in 1957.

Karen Clausen: bright Danish girl who currently resides with the Foranis to sharpen her English and French and general knowledge of world affairs.

Here was a group entirely sympathetic to U. S. A. ideals and efforts. However, Ludmilla confessed that continually she battles other teen-agers in Belgium about U. S. A. purposes, intents, and "well, just about everything."

Isabella and Karen (also cosmopolitanites Mr. and Mrs. Forani, who enjoy American contacts) agreed with Ludmilla, and cited chapter and verse about this anti-Americanism.

For decades it seems, Europeans have looked down on Americans as being crude inferiors. And they aren't about to change, despite any or all facts presented to them. Including our obvious generosity.

It's fashionable, it appears, to detest or distrust anything or anyone who or which bears a "made in U. S. A." label.

International Fat Boy

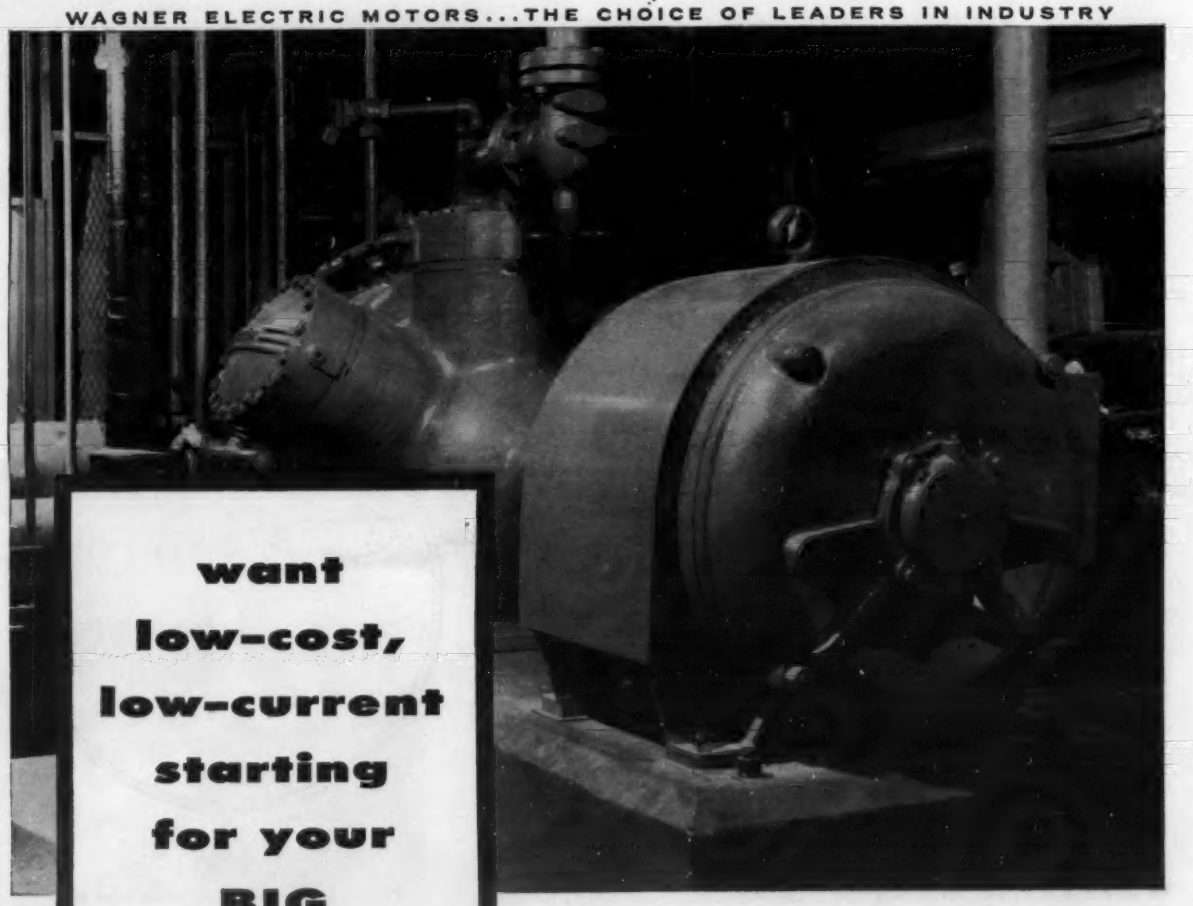
We're the International Fat Boy with the Lollipop. We're the freckle-faced little girl next door who luckily and undeservedly got rich in Hollywood. We're gangsters in private life and money-grubbers in international diplomacy.

What can we do about this rumdum attitude?

It will take a lot of work. We are tarred with envy, and

(Concluded on next page)

WAGNER ELECTRIC MOTORS...THE CHOICE OF LEADERS IN INDUSTRY



want low-cost, low-current starting for your BIG MOTORS?

Type RP polyphase motor—in ratings to 500 hp. with increment type starter.

Specify Wagner Increment Motor-Starter Combinations

Part-winding starting is the simple, inexpensive way to limit the inrush of starting current in squirrel-cage motors up to 500 horsepower—and only the Wagner Increment Motor-Starter Combination gives you all these advantages:

LOW FIRST COST—Uses a standard Wagner Motor and a part-winding starter—no need for auto-transformers or resistors.

EASE OF INSTALLATION—Starter is compact and relatively light in weight, connections are simple and easy to make.

MINIMUM MAINTENANCE—The Wagner Motor requires only regular inspection, cleaning and lubrication—the starter needs very little attention.

APPROVED BY POWER COMPANIES—Meets all polyphase motor starting requirements of AEIC—EEI—NEMA—reduces voltage fluctuations—does not open the line during the starting period.

PROVED IN SERVICE—Wagner pioneered this Motor-Starter Combination—has been furnishing it for more than 18 years—its steadily increasing popularity is proof of its efficiency and dependability.

Why not take a look at Wagner Increment Motor-Starter Combination in operation? Ask your nearby Wagner Sales Engineer to show you an installation in your area. See how it works—judge for yourself, and let him help you select the combination that meets your requirements. Just call the nearest of our 32 branch offices, or write for Bulletins MU-128 and MU-195.

Wagner Electric Corporation
6441 Plymouth Ave., St. Louis 14, Mo., U. S. A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

WH58-1

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES • AUTOMOTIVE BRAKE SYSTEMS—AIR AND HYDRAULIC

(Concluded from preceding page)

feathered by skepticism. "Life is too easy and too wonderful for you," Ludmilla (who high-schooled in Milwaukee last year) summed up. "Over here people believe you'll never understand our problems because you don't have to face them. They believe all the lies about you, too.

"I *know* how friendly and generous you are. Maybe that's your trouble. Over here we think people who give away money are fools.

"Europeans feel your lack of feelingness about our problems and values," she continued, "so they close their minds about you. They see your movies, in which you all appear to be awesomely rich, carefree, and even criminal. They see your bad-tempered and profligate tourists. They hear propaganda lies. So they decide they don't like any of you."

Added Father Forani: "It's all a matter of envy."

Peaceful Pacific

In contrast to stereotyped Old World jealousy and superciliousness toward America, nations which ring the Pacific Ocean admire and even seem to love us.

We give you the S. H. Tan and C. M. Lee families of Singapore. Typically, these astute Chinese merchants have sent their children to "The States" for collegiate education. They import and sell American products.

Mr. Tan and his entire family are missionary-converted American Christians. Our creed is their gospel.

Like good people in Singapore and the Philippines, Australians have allied themselves with the U. S. A. They look like Americans, act like Americans, and appreciate Americans, *per se*.

By showing his U. S. A. passport, an American visitor can obtain free admission (best seat available) to any professional football game in Sydney. Here's *one* nation which evidences gratitude for our World War II saviorship.

Moreover, Australia doesn't ask for nor get handouts of our foreign aid give-away money. It welcomes our "know-how," and capital investments, and friendship, but asks for nothing free.

Just as Russia did in the 1920's and 1930's, Australia currently is *buying knowledge* from America by importing our engineers, industrial and commercial experts. Thus it is leapfrogging ahead industrially.

All around the perimeter of the Pacific Ocean an American will find friends and friendly attitudes. (Plus modern sanitation!) Throughout the Middle East and Europe, however, an American visitor can expect:

(1) to be on the defensive,
(2) to be disappointed,
(3) to be frustrated,
(4) to be envied and scorned.

In places where America has spent the most money, and where Americans spend the most money, American *per se* is disliked.

There may be a moral there somewhere.

3-A Sanitary Group OK's Standard for Ice Cream Freezers

ST. LOUIS—At the recent semiannual meeting here of the 3-A Sanitary Standards Committees, attended by some 100 sanitarians, engineers, and dairy processors from all parts of the U. S., a number of tentative 3-A Standards were considered, and one for ice cream freezers was approved by the dairy processor group.

(Each standard must be approved by three groups: one represents dairy processors; another, public health officials and local sanitarians; and a third, dairy equipment and supply manufacturers.)

Other tentative standards, or amendments to existing standards, were considered for bulk milk farm tanks, coin venders, cottage cheese fillers, ice cream fillers, separators and clarifiers, plastics and rubber, and air-under-pressure.

In another action, final approval was given to a new amendment to the existing standard for pumps to provide for rubber rotors.

The next regular meeting of the 3-A Sanitary Standards Committees will occur early in 1959 in an eastern location. Persons interested in obtaining information on this session may contact the secretary of the Committees, Donald H. Williams, Room 512, 1145 19th St., N.W., Washington 6, D. C.

WHAT . . WHEN . . WHERE

— A Guide to Coming Events of Interest

Oil-Heat Institute of America Directors Meeting
Sept. 3-5, The Homestead, Hot Springs, Va.

National Institute of Locker & Freezer Provisioners Convention and Exhibit
Sept. 21-24, Hotel Sherman, Chicago.

Refrigeration & Air Conditioning Contractors Association Convention
Oct. 12-15, Broadmoor hotel, Colorado Springs, Colo.

Air-Conditioning & Refrigeration Wholesalers Meeting
Oct. 22-24, Sheraton-Palace, San Francisco.

Handy Tube Bender
Smoothly Bends any pipe or Tubing 3/8"-1 1/8" O. D.

• Just a twist of the wrist assures perfect, even bends — right angle, any angle, U and offset. Save enough on ONE job to pay for your HANDY BENDER

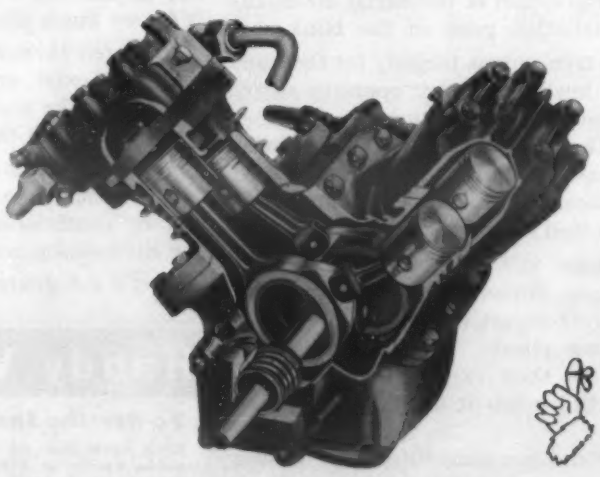
See your supply house—or write for free folder today.

HOLSCLAW BROS., INC.
428 N. Willow Road • Evansville, Indiana

Service Reminder:

A worn compressor costs more to run than to replace . . .

PUMP NEW BTU EFFICIENCY INTO CONDENSING UNITS with Lehigh Open Type Compressors



4 basic models cover every pump replacement need ¼ hp. to 7½ hp.

Pick your pump from Lehigh's New Compressor Specification Sheet. Write for a copy today.

Lehigh compressors and condensing units

Lehigh BLU-COLD

LEHIGH MANUFACTURING COMPANY, Division of Lehigh, Inc., Easton, Pa.
Manufacturers of Open Type and Hermetic Condensing Units and Compressors • EXPORT DEPT: 13 East 40th St., N.Y. 16, N.Y.

They'll Do It Every Time

by

Jimmy Hatlo

WELL···YOU'LL BE SEEING ME PERMANENT NOW, BABY··· BIGDOME PERSUADED ME TO COME WITH THIS OUTFIT···HE'S A GREAT SALESMAN-TALKED ME INTO ACCEPTING···START MONDAY AS SALES MANAGER. HE'S BEEN TRYING TO GET ME FOR YEARS···
"PERSUADED"? HE SEZ···HE'S BEEN PESTERING BIGDOME FOR SIX MONTHS TO GET ON THE CHOW LINE HERE···
THAT'S JOE BLOWFUSS···THE ONLY TIME ANYBODY EVER PERSUADED HIM TO TAKE A JOB WAS WHEN THE SHERIFF PUT HIM ON THE ROCK PILE···
NOW THAT HE'S GOT THE JOB, COMES THE TOUGH PART OF GETTING HIM TO DO A LITTLE WORK···
SALES MANAGER, HE SAYS···ALL THE SALESMEN GET THAT TITLE··· IT LOOKS BIG ON THE BUSINESS CARDS-BUT NOT IN THE PAY ENVELOPE···
LISTENING TO THE GUY WHO'S BEEN OUT OF WORK FOR MONTHS TELL HOW HARD HE WAS TO GET····
THANX AND A HATLO HAT TIP TO JOHN J. TERRELL, 422 E. DETROIT, PONCA CITY, OKLA.
5-28
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How To Break Out of the Business Slump —Cultivate Prosperous Export Market

(Concluded from Page 1)

the United States is. The old belief that if America sneezes Europe will catch pneumonia simply isn't true nowadays.

And quite a few foreign markets—notably Australia, Malaya, Thailand, the oil-producing Arab states, Germany, France (yes, we said France!) are enjoying booms of a dazzling nature.

There, then, is our industry's opportunity. It's an old (and wise) axiom to "look for business where business is." Instead of flogging that tired horse, the fed-up American consumer, let's go after business abroad! It's *there*.

At first glance this suggestion may convey little hope or meaning to a contractor or dealer in Chicago, New York City, Scranton, or Kalamazoo. But look, Mr. Local Contractor-Dealer:

If the manufacturers who supply you grow more prosperous by selling a bigger volume of goods abroad, their production runs will be longer. Hence they can hold the line on prices, or even reduce them to you. And then they'll have more money to advertise and promote business at home, where *you* live and are trying to make a living.

Those manufacturers who do pitch woo to foreign buyers find them to be exceedingly profitable customers. Prices paid abroad for our refrigeration and air conditioning products are higher than are received in America's much more competitive area.

Licensing arrangements can be quite profitable, also, in countries which restrict imports.

To be sure, many small nations in outlying areas are poor, and have chronic shortages of foreign exchange. Their poverty, however, often is more than offset by the comparative wealth of those countries into which we are pouring American "foreign aid" dollars by the shipload.

Other factors favoring a recession-buster buildup of foreign trade:

The United States is a huge importer of raw materials—the greatest. The United States invests enormous amounts of private capital annually in sound countries like Australia, Canada, Venezuela, etc.

And, of course, the American government hands out billions of dollars abroad every year in our continuing foreign aid program. These billions of dollars come out of our personal and corporate income taxes. Why not get some of these dollars back into our own coffers, *honestly and usefully* all around?

By "all around" we mean: cultivating the export trade is mutually beneficial—to our industry, to our nation, and to the nations with which we do business.

Our industry is in a singularly able position to do that. Incomparably the U.S.A. is the most advanced nation on Earth (technologically and productionwise) in terms of nearly all applications of refrigeration and air conditioning.

Thanks to its enormous (even in recession!) domestic market, air conditioning and refrigeration equipment — including parts and pieces—produced in the United States can be sold almost anywhere for less than equivalents produced elsewhere. Moreover, our stuff is *reliable*.

Service is a bigger problem abroad than it is here, bad as it may be in your home town. An American citizen has no idea how lonely and helpless an importer or user feels in, say Bangkok or Karachi, when a commercial refrigeration or industrial air conditioning installation goes on the blink.

That's a tremendous tragedy for the user. He's out of business until it operates again. That product's manufacturer — whether American, German, British, Italian, or Swiss —is thousands of miles distant. Likewise, his technicians. So it's also a personal problem of magnified morbidity for the importer.

Right there, in this arena of service, is where German, Swiss, British, Italian, and Danish manufacturers are stealing a march on us in some places. Their products may cost more, but their export representatives are on the ball when it comes to servicing them.

Hence, European competitors are moving into a vacuum caused by American manufacturer's neglect during the last dozen years. (That neglect is understandable—until recently we've been too busy at home.) Even so, these foreign competitors are inroading into markets which we've taken for granted too long, and are in danger of losing.

Writer of this editorial has just returned from a swing around the world (and up-north-and-down-south, from Australia to Iceland, which is almost as far south and north as you can go and find people). Everywhere we met subscribers who were almost pathetically eager to *get their names into* AIR CONDITIONING & REFRIGERATION NEWS, and have their problems aired *vis-a-vis* their American suppliers.

This can be regarded as a tip-off. These importers and licensees have been doing a good job despite our indifference. They could do a much better job if we paid more attention to them.

Their markets provide vast potentialities for American suppliers which haven't begun to exploit their potentialities. Relatively, many of these importing nations are more prosperous right now than we, and *they are eager to provide us with a springboard to jump out of our slump.*

Gentlemen, here's a gold-plated opportunity to break out of America's business recession. How do you start? It's very much like dealing with a wife.

You tell them that you appreciate them. You recognize that they exist, and are doing things for you. (American exporters, like husbands, too often take this for granted.) In essence, "put their names into the paper."

Truly, a trifling amount of extra attention paid to the export business *and recognition of it* can lift the American air conditioning and refrigeration business out of its sad little slump, and revive our entire industry.

Let's get going! There's money to be made!

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AIR CONDITIONING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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"A newspaper conducted on the true and natural principles of such a publication ought to be the register of the times, and faithful recorder of every species of intelligence. It ought not to be engrossed by any particular object, but, like a well-covered table, it should contain something suited to every palate."—*John Walker.*

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Copper Tubing (5)

Type K copper tube is generally recommended for underground systems carrying water, gas, or oil. Since tube sizes up to 2 in. are available in soft coils, it is common to use soft tubing for such uses as water-main-to-meter, underground-oil-storage-tank-to-burner. In such cases, it is often possible to go from one end to the other with only one fitting at each end.

A gooseneck or long radius bend should be formed in the tube near the main or storage tank to allow for stresses and ground settlement. Flare fittings are easier to work with under these conditions where dirt and moisture are encountered. Type L is also frequently used for underground work.

Water Tubes Must Be Below Frost Line

All water tubes must be installed below the frost line. Although soft copper tubing has been known to withstand several freezings, it is not recommended that this factor be considered in laying out systems. Hard copper tube will burst as does other piping material when frozen.

For interior water lines, all three types of copper tube may be used—depending on local codes. Type L is most common. Generally, soft tube is used for concealed work and hard tube is used where neatness and appearance are factors. Soldered joints are most used, with flare fittings used as unions where there may be a need to break into the tubing.

Type M has been widely used for sanitary drainage, but is rapidly being replaced by the new DWV which is more economical.

Type 'L' and 'M' Used In Heating Jobs

In heating, L and M are used —with hard temper recommended for risers and supply and return mains because of its greater rigidity. Soft tube is used for short runouts to convectors and radiators.

According to CABRA, copper tube may be used in large buildings since such buildings are zoned every 10 stories or so; type K is recommended. The main supply riser might be an exception since pressures could be greater than would be acceptable for copper tube and joints.

The use of appropriately cleaned water tube for refrigeration service satisfies most codes. Refrigeration piping practice, as such, is guided by ASTM 280 — refrigeration code and ASA B.9—safety code for mechanical refrigeration. On the subject of copper tube, section 9.3.3 of this latter code states, "Water tube-size hard copper tubing used for refrigerant piping erected on the premises shall conform to ASTM specifications —type K or L—except that copper tubing with outside diameters of ¼ in. and ⅜ in. shall have a minimum nominal wall thickness of 0.030 in. and 0.032 in. respectively."

Section 9.3.4 of the same code says in part, "Soft annealed copper tubing used for refrigerant piping erected on the premises shall not be used in sizes larger than ⅞ in. O.D. (¾ in. nominal)."

In specific instances, the local codes must be considered. For example, some codes require hard temper copper to be used in certain parts of refrigeration tubing. In general, codes on refrigerant piping include brine piping in their scope.

In practice, several types and classes of copper tube might be used. Take an evaporative condenser for example. Refrigeration service tube can be used for both refrigerant and water lines.

Or water tube can be used for both—with due cleaning and drying of the lines to be used for refrigerant. Or water tube could be used for water lines and refrigeration service tube for refrigerant.

Incidentally, coiled refrigeration service tube can be used for control tubing, instruments, and meters.

Many times, the kinds of tube used is determined chiefly by what tube the installer's wholesaler carries. As we shall see in our later discussion of distribution, not all distributors and dealers handle all kinds of tube.

Depending on the installation and end use, copper tube is fitted with soldered joints or with compression fittings of one type or another—usually flare fittings. Generally speaking, hard tube is solder-fitted; soft tube is soldered or compression-fitted. (Soldering techniques and pitfalls are discussed thoroughly in the four NEWS issues of June, 1957.)

Compression Fitting of Hard Tube Requires Care

Hard tube can be compression fitted, but it is difficult and requires more care than the normal serviceman and installer is liable to give. Most servicemen are familiar with the fact that soft tube which has work-hardened will split and crack when being flared. This trouble must be avoided when beginning with tube which is originally hard.

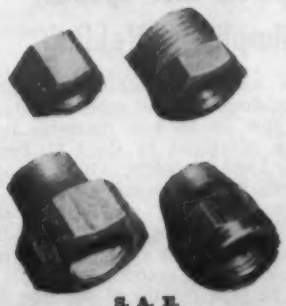
Tighten down on the flaring tool very slowly when working with hard tube. Some mechanics recommend heating the end of the tube with a torch before flaring to soften the tube.

"O" ring-type compression fittings are used where soldering and flaring are impractical for some reason, but they are more expensive. Actually, solder joints are popular because of their low cost and compactness as well as their effectiveness. Flared or other compression fittings are used where dirt or moisture make soldering impossible.

For refrigerant lines, flared fittings are restricted to tube sizes under ¾ in. O.D.

(To Be Continued)

PIPER'S



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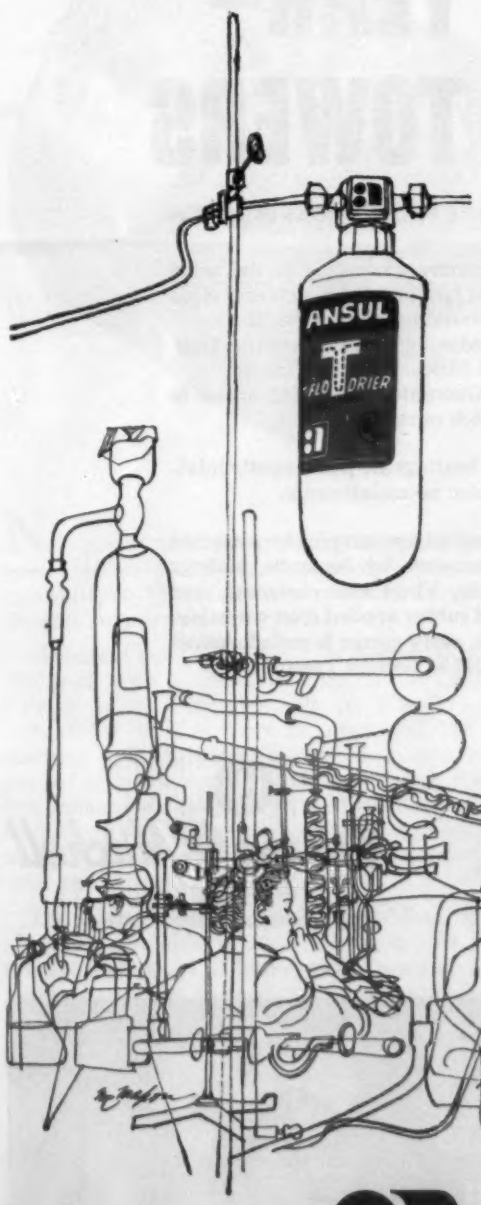

A free-wheeling kind of imagination has been at work when someone creates a really new product for the refrigeration industry . . . for any industry. We mean a product like Ansul's T-FLO DRIER—completely new in concept, excitingly successful in use. Let our Ansul people put their blend of experience and imagination to work for you. Their personal attention to your refrigeration moisture problems is yours for the asking and our refrigeration products guide is yours for the writing.

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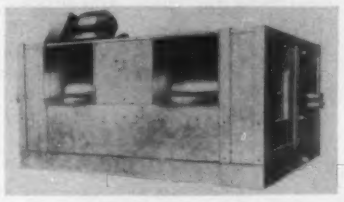
FOR MORE INFORMATION ON THE PRODUCTS DESCRIBED ON THIS PAGE
Write Directly to the Company—*at the Address Given in the News Item*

Carrier Offers 2 New Central Station Lines



Two new lines of central station air conditioning units, said to feature space-saving design and flexibility with extra capacity, were announced by Carrier Corp., Dept. AC&RN, Syracuse 1, N. Y.

Conditioning efficiency has been improved while reducing space and weight by as much as 25% in some sizes, according to Carrier. They reach a top capacity of 41,750 c.f.m. of conditioned air with a coil face velocity of 700 f.p.m. with no water carryover. For face velocities of 575 f.p.m., the units provide 33,500 c.f.m.

Eight sizes with air volumes from 2,400 c.f.m., are available in each model of the Carrier "System" and "Zoning Weathermakers." Centrifugal fans in these lines "handle large quantities of air with an available static pressure of approximately 4 in., almost double that of current equipment," Carrier said.

These fan-coil units use direct expansion or remotely located cooling and heating sources. "Installation is simplified by their uniform outline, ease in assembling, and provision for pipe connections on either side," it was noted.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

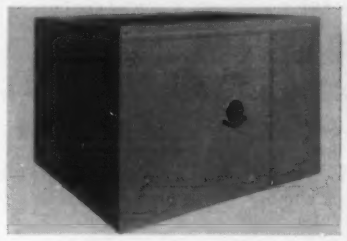
Only 25¢ each.

Small Amprobe Also Measures Resistance

A pocket-size, snap-around voltmeter - ammeter - ohmmeter that permits the electrical man to measure not only current and voltage, but resistance as well has been introduced by Pyramid Instrument Corp., Dept. AC&RN, 630 Merrick Rd., Lynbrook, N. Y.

The model RS-3 "Amprobe" comes equipped with ohmmeter battery attachment, voltage test leads, and top-grain cowhide leather case. It is priced at $52.50 complete.

With built-in recessed range selector, a flick of the thumb can select five ampere ranges, three voltage ranges, and one ohmmeter range.



York Announces Remote Residential Conditioner

A new remote air conditioner for the residential field has been announced by York Corp., Dept. AC&RN, York, Pa.

Designated as the York "Champion" series model CA40, the new unit is air cooled, available in 43,500, 46,000, and 48,000 B.t.u.h. capacities, according to York.

New features include top air discharge, high-speed direct-driven propeller fan, and acoustically insulated compressor compartment.

Charging Hoses Made For High Pressures

A new line of heavy-duty, high-pressure charging hoses is being marketed for the refrigeration industry by the Mueller Brass Co., Dept. AC&RN, Port Huron, Mich. The new hoses have a rated burst pressure of 3,000 p.s.i.

Available sizes are ½ and ⅜ in. with lengths of 12, 24, 36, and 60 in. A board, suitable for wall or counter, has been designed to display the new charging hoses.

Dewpoint Indicator Features Portability

A new, portable dewpoint indicator which permits continuous dewpoint measurement over a wide temperature range has been developed by Weighing & Control Components, Inc., Dept. AC&RN, 301 Lincoln Ave., Hatboro, Pa.

W-C dewpoint indicator does not require purging of the test gas chamber each time a reading is to be taken, the firm claims. It gives accurate readings with fast response over a dewpoint temperature range of -100° F. up to a maximum ambient of 110° F.

Pipe Rotator Speeds, Simplifies Welding

A new pipe rotating machine that simplifies and speeds welding of pipe up to 5-in. diameter has been developed by Cecil C. Peck Co., Dept. AC&RN, 14901 Woodworth Rd., Cleveland 10.

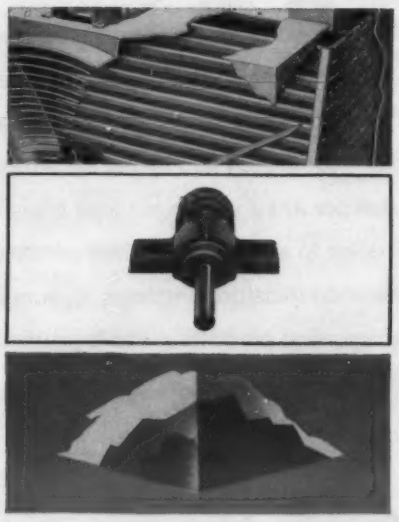
The Peck "Jr" can be used for contract heating and plumbing where long pipe runs can be prewelded before erection.

The pipe rotator is powered by a ¼-hp. capacitor-type 110-v. motor through an adjustable-speed V-belt transmission with step-down gearing. Welding speed range of 7 to 14 in. per minute is obtained by adjusting the motor position, the firm claims.

SO HALSTEAD & MITCHELL ENGINEERS SAID . . .

FOR LIKE-NEW PERFORMANCE YEAR AFTER YEAR— H&M COOLING TOWERS

Halstead & Mitchell Cooling Towers give rated performance even after years of operation



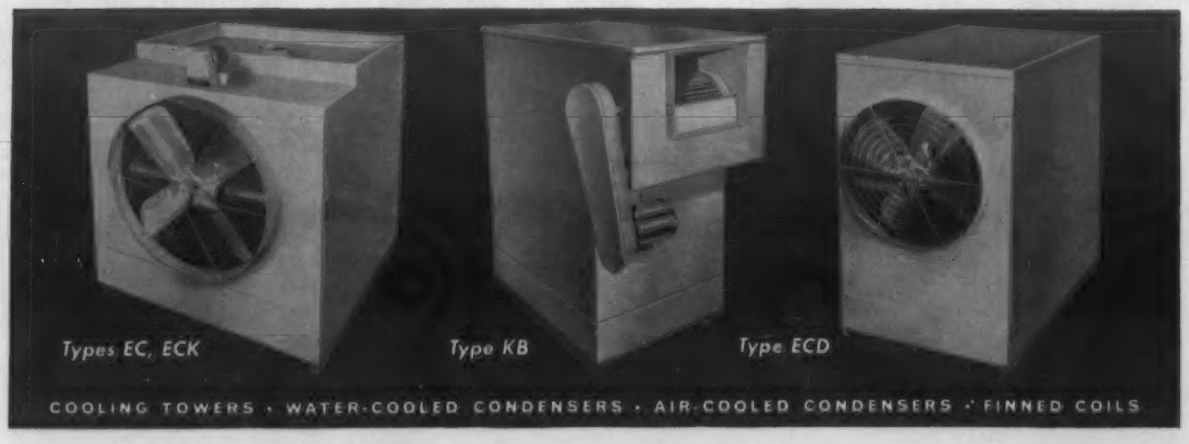
Special pressure creosoting of the wood fill prevents formation of fungus and algae which can build up and restrict the tower air flow, reducing system capacity. Only Halstead & Mitchell Cooling Towers carry a 20-Year Guarantee against failure due to fungus attack or rotting.

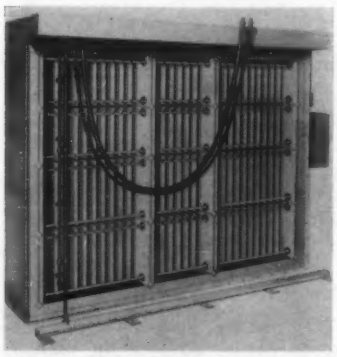
Sealed fan bearings are permanently lubricated, require no maintenance.

Tower housings are completely protected against corrosion by separate coatings of Vinsynite, Vinyl zinc chromate, and chlorinated rubber applied *after assembly*. Every edge, every corner is sealed against rust on all H&M Cooling Towers.

H&M Cooling Towers are available in propeller fan, centrifugal fan, belt drive, direct drive, and take-apart models. Capacities of 2 through 125 tons. For complete information contact your local distributor, or write to Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.

Halstead & Mitchell





'Electro-Cell' Offers Sectional Construction

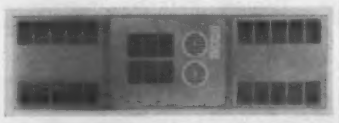
A new high-velocity electronic dust precipitator has been introduced by American Air Filter Co., Inc., Dept. AC&RN, 215 Central Ave., Louisville 8, Ky.

The "Electro-cell" unit is now offered in a new design which operates at face velocities of up to 600 f.p.m. High efficiency is maintained while over-all compactness has been greatly improved, the company said.

The unit features sectional construction for ease of assembly. Individual cells contain positive and negative collector plates fixed in position. Each cell has its own set of vertical ionizing wires. This construction differs from the standard Electro-cell in that it eliminates a separate ionizer section. The initial cost is lower and the installation cost is reduced as well, the company noted.

The all-aluminum collector cells are available in heights of 16 in. and 20 in., and widths of 24 in. and 36 in. Cell capacity ranges from 800 to 2,750 c.f.m.

ALL-PURPOSE refrigerated wall display case designed for a variety of purposes has been developed by Frigid Igloo Mfg. Corp., Dept. AC&RN, 360 Ashburton Ave., Yonkers 2, N. Y. It can be used as an all vegetable and fruit display, combination vegetable and dairy products display, all dairy products, or beverage and dairy products display. It stands 60 in. tall, is of modern all-steel welded construction throughout.



New 'Weather-Twins' Solves Many Problems

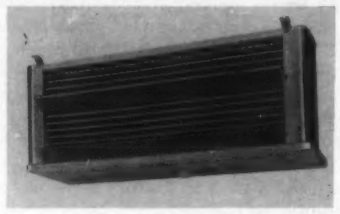
A new model of the "Weather-Twins" has been introduced by Kelvinator Div. of American Motors Corp. and Embassy Steel Products, Inc., Dept. AC&RN, 890 Stanley Ave., Brooklyn 8.

Named model WT-CAC, this Weather-Twins consists of twin Embassy convectors for heating with a Kelvinator cooling unit in the center.

According to Embassy, the new model "solves many heating and cooling problems in commercial and residential applications, particularly in large rooms that are difficult to heat."

A number of air conditioner units are available with cooling capacities from 7,400 to 13,300 B.t.u.h. in 115-volt with low amperage, it was stated.

Tenney Introduces Low Cost Unit Cooler Line



A new line of low-cost, lightweight aluminum unit coolers, especially designed for back bars, reach-ins, direct-draw bars, under counters, and low boys, as well as for walk-in coolers, has been developed by Tenney Engineering, Inc., Dept. AC&RN, 1090 Springfield Rd., Union, N. J.

Designated as MX models, the unit coolers range in capacity from 900 to 12,000 B.t.u. Factory-mounted keyhole slotted hangers on the smaller sizes permit installation on walls or ceilings without impairing access for servicing.

The entire MX series is available with blow-through air flow systems, standard on the six bigger models. Suction air flow is standard on the other three. Coils are non-ferrous, with minimum pressure drop circuiting. There is ample room for a TX valve. Fan and motor combinations are quiet, and "life lubricated" motors are standard equipment, the company asserts.

Introduces Taylor Twin-Model Freezer

A new twin model Taylor freezer enables serving of malts and shakes from one side and soft-frozen dairy products from the other, according to Tekni-Craft, Dept. AC&RN, Rockton, Ill.

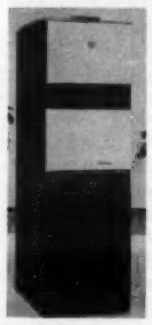
Called model 666, this unit consists of two automatic continuous freezers, each with its own 16-qt. mix hopper, automatic temperature controls, beater motor, self-contained compressor, and electrical footswitch, so that both sides may be operated at full capacity continuously.

Model 666 features the new Taylor "Profit-Minder" mix feed which automatically synchronizes mix flow with draw-off rate and controls it so that overrun will be consistently high regardless of mix level, the company said.

The right side, for malts and shakes, has a ¾-hp. beater motor and a 1-hp. condensing unit.

Payne Heating Elements To Have Protective Coat

"Astrogard" is the trade name announced for the new patented protective coating which will be applied to all products offered with coated heating elements by the Payne Co., Dept. AC&RN, 855 Anaheim - Puente Rd., La Puente, Calif.



This includes all types of forced air furnaces — upflow, downflow, and horizontal — plus floor furnaces, wall heaters, fan - type wall heaters, and duct furnaces.

Announcement of the new coating coincided with the introduction of Payne's new Series 10 "Imperial" forced-air furnace line to the trade. The new line includes five sizes of downflow models in capacities from 80,000 to 160,000 B.t.u., and nine sizes of upflow models in capacities from 75,000 to 200,000 B.t.u. All Series 10 models are available with either "Black Iron or Astrogard coated heating elements.

Astrogard is described as "a patented formula which includes Boron and 22 other elements combined for scientific fusion to metal by an exclusive Cermet process developed for jet engines, airframes, and missile parts exposed to sudden thermal shock changes in temperature." Solar Aircraft Co. of San Diego has licensed Payne to use the new coating.

Reduce Costs By Using New, More Powerful Shaded Pole Motors In Your Appliances

Redmond
TYPE AY TRI-FLUX
SHADED POLE MICROMOTORS

Redmond's New Design Greatly Increases Shaded Pole Motor Application

Now you can reduce costs by using the powerful new Redmond Tri-Flux® shaded pole motor in applications that formerly required more costly general purpose motors.

Redmond's patented Tri-Flux design adds a third flux path with a "reluctance notch" in the leading pole tip making possible a larger diameter shaded pole motor that is more efficient and has higher starting and running torques than conventional shaded pole motors. It is this exclusive Redmond feature that makes your shaded pole motor powerful enough to replace the more costly types you may now be using and which may be over-motoring your product.

The basic AY shaded pole MicroMotor pictured above is available in both 4 and 6-pole designs, ranging through 1/3 horsepower in many applications. It can also be modified readily and economically to fit your exact specifications for both mechanical and fan duty requirements.

The Redmond type AY Tri-Flux shaded pole motor is a quality product yet it is still the most economical style motor available when properly applied and tailor-made to fit your requirements. Designed and developed by the Redmond Company, millions of these motors are now in operation in a multitude of air-conditioning, refrigeration, heating and ventilating applications where years of trouble-free service and whisper-quiet operation is essential. The Redmond Company has been a specialist in the design and production of shaded pole and fraction horsepower motors for more than a generation and have produced well over 70,000,000 motors during this period and is considered a leader in its field. Redmond motors are constructed with UL and CSA approved materials and methods and you may be assured that production motors will maintain the same high quality-precise specifications found in hand made test samples.

Redmond sales engineers are skilled technicians whose primary function is applying a motor to your production. Call us today to help you with your cost reducing program.

HAVE YOU INVESTIGATED THE LATEST DEVELOPMENTS IN MOTORS?

Redmond engineers want to help you adapt these motors to your specific needs. Contact us at Owosso, Michigan, and we will have the Redmond sales engineer in your district call you at once.

The Standard of Dependability
Redmond
COMPANY, INC.
OWOSSO, MICHIGAN
ADVERTISED IN The Saturday Evening POST
THE BIG NAME IN SMALL MOTORS

How Fedders Flexible Co-op Advertising Policy Encourages Merchandising-Minded Dealers

Give-Aways, Free Home Trials, Dealer Incentives, Contests, Radio and TV Barter Deals Included

NEW YORK CITY — How Fedders-Quigan Corp. encourages merchandising minded dealers in every way possible through cooperative advertising funds was described recently by Harold Boxer, Fedders advertising manager.

"We allow our co-op funds to be used for in-store promotions, give-away premiums, contests, free home trials, distributor-created display materials, dealer incentives including 5,000 overseas vacations, radio and TV barter deals, and practically anything else approved by our regional and district sales managers, in addition to advertising in approved media," he declared.

"In the Fedders advertising department," he told a workshop on cooperative advertising sponsored by the Association of National Advertisers, "we have found that we cannot evaluate these dealer and distributor brain-storms nearly so well as our men in the field.

"And we certainly cannot expect our advertising agency to have the wisdom to cope with all the sales decisions involved in regulating a network of 74 distributors and more than 10,000 promotion-minded dealers.

Boxer said that after allowing the advertising agency to administer the funds in 1953 and 1954, Fedders advertising department had to take over the job itself.

"Distributor relations," he asserted, "were too delicate, too important to be entrusted to a third party.

"After living through a series of crises in our sales and advertising departments in which distributors laid their Fedders franchise on the line against agency-imposed restrictions on their promotional planning, we concluded that in our business, at least, cooperative advertising was a home office responsibility.

"If you think that this free-wheeling policy has resulted in frittering away our co-op funds," he continued, "look at this May 17 Advertising Checking Bureau report for 64 key markets.

Fedders Claims Lead In Newspaper Advertising

"Fedders leads its 25 competitors with 22% of the total newspaper lineage on air conditioners. It's been like that for the past five years. We have consistently been in first or second place against some well-heeled competitors."

Boxer termed Fedders cooperative program as "a force that can inspire activity on the retail selling floor.

"We believe at Fedders that one of our greatest assets is the promotional steam that our distributors and dealers can generate spontaneously over and above any help, advice, suggestions, or sales aids the factory can provide.

"Lest you believe that we operate our co-op program in a sort of every-man-for-himself anarchism, I would like to tell you briefly how we administer cooperative advertising at Fedders.

"First we have a well-detailed cooperative advertising manual that describes how cooperative advertising funds are accrued, how they may be expended, that lists approved media, and outlines procedures for submitting and processing advertising claims.

"But we regard this formal statement of our co-op policies not as a club to be wielded against distributors—but as a defensive weapon to be used by distributors against rapacious dealers.

"We are quite content, if it fits the distributor's plans, to turn down a dealer's proposal for using co-op funds, for him to plead that his hands are tied by the thick-skulled idiots in the factory advertising department.

"On the other hand, while distributors are limited to approved media, they can gain exemption from most limitations by securing approval of regional and district sales managers on one of these special advertising request forms. This form alerts our advertising department to any exceptional co-op expenditure so that the distributor's advertising claim may be processed promptly when it reaches us.

Two Separate Co-op Advertising Funds

"We have two separate and distinct cooperative advertising funds at Fedders—a regular co-op fund and what we call our In-Market Fund.

"Distributors are billed an advertising accrual on each unit purchased, which is matched dollar for dollar by the factory to make up the regular co-op fund.

"From this fund, the distributor is reimbursed 100% of his actual participation in dealer advertising. To prove what that participation is, distributors submit copies of their advertising credits to dealers along with their co-op claims.

"The In-Market Fund on the other hand is based on the market potential and sales objectives for each market. The In-Market fund is the lever by which our sales department can achieve its objectives rather than simply perpetuate an existing sales pattern.

"While there has never been as exact formulation in so many words, you can easily see that in our company, unlike the usual appliance business where advertising funds are used for sales purposes, this is a sales fund which is used for advertising purposes.

"It is called an advertising fund; it is administered by the advertising department, and it is used for advertising and promotion purposes.

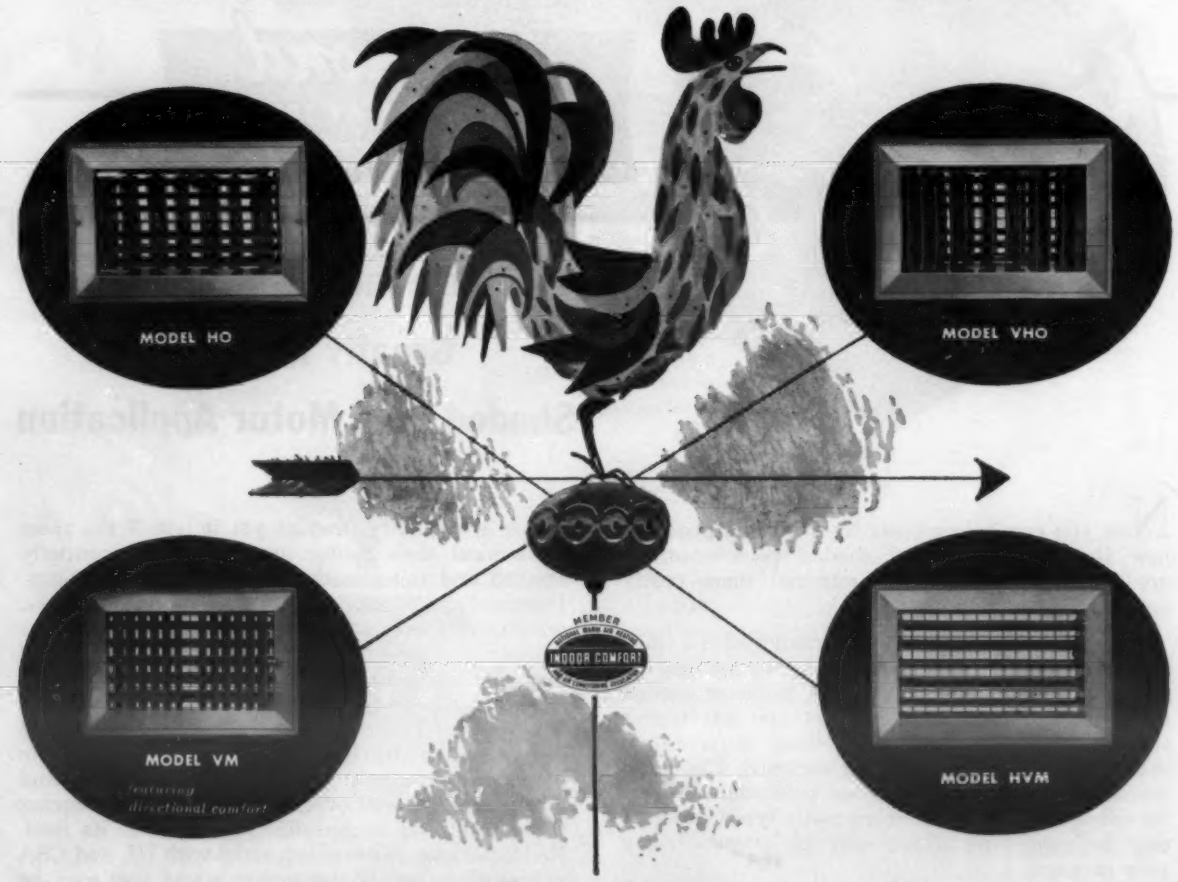
"It is a sales fund that is not dissipated by special price concessions, unwarranted discounts, spiffs, and other shortsighted

(Concluded on next page)

NEW! from STANDARD

the *modulaire* SERIES

AIR-CONDITIONING REGISTERS and GRILLES



Standard introduces a new line of air-conditioning registers and grilles with **MODULAIRE.** Standard calls this concept "directional comfort" and it means just what it says . . . the right pattern and velocity of cool air for any given air-conditioned space. There are **MODULAIRE** models available with a variety of face bar combinations (horizontal and vertical; single and double bank) with either opposed blade dampers or multi-valve louvers . . . models to fit any need . . . any application. Write for Standard's new catalog!

MODEL HO Single Bank Deflection Register with Opposed Blade Dampers

MODEL VM Single Bank Deflection Register with Multi-Valve Louvers

MODEL HVM Double Bank Deflection Register with Multi-Valve Louvers

MODEL VHO Double Bank Deflection Register with Opposed Blade Dampers

Mail coupon for free catalogs and information on the complete STANDARD line of registers and grilles for all your air-conditioning, heating, and two-way system needs!

INCLUDED AMONG STANDARD'S REPRESENTATIVES:

Lee Dewhirst, 139 N. Mead, Wichita, Kansas
Cliff Derbes Associates, Inc., 2430 N.W. 140th Street, Opalocka, Florida
H. E. Culley, 414 W. Main Street, Louisville, Kentucky
Lee Gary, P.O. Box 57, Gates Mills, Ohio
George Bolinger, 901 W. Vickery, Fort Worth, Texas
Herbert G. Wilson, P. O. Box 254, Anaheim, California
G. R. McKenzie, 2811 So. 20th Street, Birmingham, Alabama
Mike Mitchell, West Jefferson Street, Kosciusko, Mississippi
Irwin I. Plotsky, 73-35 135th Street, Flushing C, New York

STANDARD
STAMPING & PERFORATING CO.
3113 W. 49th Place, Chicago 32, Illinois

Gentlemen: Please send me the following
☐ Standard MODULAIRE air-conditioning catalog
☐ Standard Register and Grille Catalog
Name
Company
Address
City Zone State

Flexible Cooperative Ad Policy--

(Concluded from preceding page)

devices which do not build business in any basic way.

"The distributor is not billed for his In-Market participation, but invariably he uses it up to the last dollar, even though it involved an out-of-pocket expenditure on his part over and above his per-unit contribution to the co-op fund.

"For this reason, the In-Market fund is used for advertising media not specifically authorized in the co-op manual and for special promotions. The fact that In-Market expenditure involve an out-of-pocket cost to the distributor acts as pretty good insurance that the distributor will not fly by the seat of his pants in using the In-Market fund.

Radio Seems To Be Area Of Greatest Abuse

"Moreover, for all In-Market expenditures request forms must be submitted and approved as an additional safeguard.

"As a matter of fact, we use this built-in insurance ourselves in the case of radio, which we have found to be the area of greatest co-op advertising abuse.

"We have seen so many radio station invoices that were obviously a fifth carbon with the word "Fedders" in clean, original typing that we have become extremely suspicious of this medium—not only as to their rates, but for double-billing and for non-performance.

"Therefore, in our Co-op Manual, radio is an approved media only for the In-Market Fund.

"We use a single advertising claim form for both funds. We require, in addition to copies of distributor advertising credits to dealers, newspaper invoices, and tearsheets.

"We will grant no exceptions to this regulation—except in the case of department stores, for which we can rarely obtain newspaper invoices. Can anyone?

"However, we check claims for department store advertising against published rates and find generally that we are paying the lowest rate possible.

One Man Processes Co-op Bills

"Co-op bills are processed by one man who bears the somewhat pretentious title of 'Advertising Accounting Department.' We have found that the term 'Accounting Department' carries weight with our distributors and that 'Advertising' by itself never wielded.

"Rarely is there any appeal from his decisions. When there is, he acts like the Department of Internal Revenue—he says 'no' and keeps on repeating it until the matter goes to court before the advertising manager or is appealed to the sales manager.

"We have developed a simple device to cut down the endless, suffocating correspondence that can be involved in processing co-op advertising claims.

"This brief form letter covers 99% of all the circumstances that may prevent prompt passage of co-op claims. The last paragraph in the form letter calls attention to a numbered paragraph in our Co-op Manual which may be in violations.

Advertising Mats Get Considerable Attention

"Finally, we devote a great deal of attention to the creation of dealer advertising mats. This year we have prepared 127 dealer ads and we release them throughout the year.

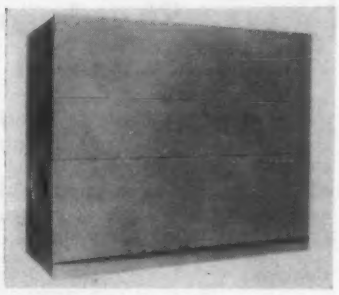
"We have found to our sorrow, that of all the advertising experts we run across in our work, no one is quite as expert as the retail dealer.

"At the slightest excuse, he is ready to design his own advertisement. And generally this expert comes up with '$100 less than any other store in town' completely ignoring product features.

"We try not to give him that excuse by building his name right into the headline."

Typhoon Offers 50, 60-Ton Water-Cooled Packaged Units

BROOKLYN — Packaged water-cooled air conditioners with hermetically-sealed compressors in 50 and 60-ton models are now available from Typhoon Air Conditioning Co., Div. of Hupp Corp.



TYPHOON Model 11516 and H616

The new models feature compactness, all copper, tube-within-tube condenser design, oversize compressor capacity, automatic controls and safety devices, high capacity cooling coils, and water and electrical connections that simplify installation and servicing, according to the company. The 50-ton model provides 610,000 B.t.u./hr. cooling capacity and the 60-ton model, 733,000 B.t.u./hr., it was stated.

Steam or hot water coils are available as accessories to convert the unit to year-round operation.

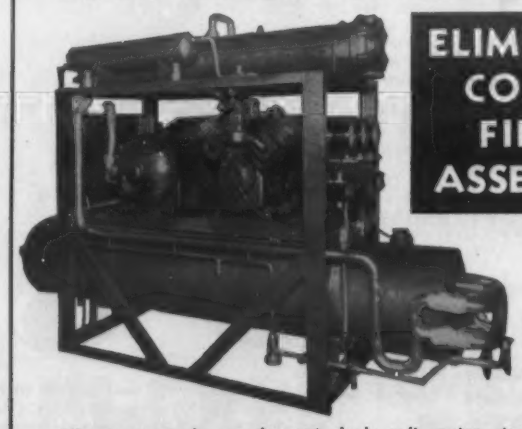
Both models may be obtained with any of four discharge-return arrangements, making these units adaptable to any installation, the company said. The four arrangements are: vertical discharge with rear return; vertical discharge with front return; front horizontal discharge with rear return; and rear horizontal discharge with front return.

The 50-ton model has five compressors with a nominal capacity of 10 hp. each (single or three phase) and the 60-ton model has six.

"Use of several compressors, each with its own electrical and refrigerant circuit, provides maximum reliability and minimum power requirements," the announcement stated. "The air conditioner continues to operate if trouble develops in one circuit. Electrical relays cause the compressors to cut in in sequence, reducing sudden power demands at start up.

"Typhoon cabinets are 14-gauge, cold rolled steel, electrically welded into a rigid, vibration-free unit, lined with acoustic and thermal insulation. Exterior is a baked, gray enamel. Both units measure about 120 in. wide, 103 in. high, and 45 in. deep."

SCHNACKE THERMATROL
WATER CHILLERS



ELIMINATE COSTLY FIELD ASSEMBLY

completely packaged line . . . 10 through 300 tons

All components in one low-cost single unit, motor, starter, full Freon charge, Thermatrol capacity control—everything! Designed for standard conditions: for R-12 and R-22. Standard 10 to 75 ton capacities. Also Specification Models to fit any requirements including Dual and Quad compressors. Simple hookup and balancing. Ideal for multi-zone construction and year around systems. One order does the job! Write for engineering data.

Manufacturers of
Compressors, Condensing Units, Cooling Towers

Evansville 7, SCHNACKE, INC. Indiana

Break the BARRIER and close the sale

SELL ON TIME COMMERCIAL CREDIT PLAN

A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over $200,000,000 . . . offices in principal cities of the United States and Canada

Most of your prospects need their cash reserves and usual lines of credit for current operations. Break through this financial barrier. Make it easier for the prospect to sign on the dotted line by including financing arrangements. COMMERCIAL CREDIT'S Refrigeration Plan is backed by many years' experience in your industry—experience in handling financing for thousands of commercial refrigeration and air conditioning installations.

Let us show you how COMMERCIAL CREDIT experience and know-how saves you time and money . . . and helps you close sales with less delay. Call the nearest COMMERCIAL CREDIT office or write COMMERCIAL CREDIT CORPORATION, 300 St. Paul Place, Baltimore 2, Md.

Make your proposals complete . . . include financing with COMMERCIAL CREDIT PLAN

Grounded Fly Boys To Study In Comfort

MOBILE, Ala.—According to Col. Harold E. Bisbort, Army district engineer at Mobile, a contract for air conditioning five academic buildings at Keesler Air Force Base, Biloxi, Miss., has been awarded to Smith's, Inc., of Dothan, Ala., by the U. S. Army Corps of Engineers for a bid price of $294,890.

Col. Bisbort said that the job will include necessary interior alterations to the buildings, the removal of existing heating and ventilating systems, and the installation of a complete air conditioning system for winter heating and summer cooling in each building, and exterior electrical work.

SEND FOR REPRINTS

Product Knowledge, Protective Maintenance, Trouble-Shooting, Adjustment, Repair of Electric Motors.

Only 40¢ each.

For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Plant Vacation Schedule

Shutdowns Starting

JULY 21 or Earlier

This is the fifth in a series of handy guides to vacation schedules announced by manufacturers. It is published to help salesmen avoid useless calls and to assure purchasing departments of adequate stock on hand. This list will not be repeated. CLIP and SAVE for future reference.

Company	Shutdown Period Plant	Office	Shipments From Plant
Atlas Valve Co.	7/21-8/3		Emergency
Connor Engineering Corp.	7/21-8/1	7/21-8/1	None
Eastern Industries, Inc., Newton Plant	7/21-8/3		Emergency
Frick Co.	7/21-7/28	7/21-7/28	Emergency
Fulton Sylphon Div., Robertshaw-Fulton Controls Co.	7/21-8/4	7/21-8/4	None
Kerotest Mfg. Co.	7/14-7/27	Skeleton	Regular
Mueller Climatrol	7/4 -7/12		Emergency
Standard Stamping & Perforating Co.	7/21-8/3		None
Superior Tube Co.	7/4 -7/14	Open	None
Tenney Engineering, Inc., Baltimore Plant	7/21-7/28		Stock Only
Tuttle & Bailey	7/18-7/28	Open	None
Wilcolator Co.	7/18-8/11		None

Prompted by Summer Attendance Rise

U. of Miami Buys 120 Packaged Units To Cool Classrooms

MIAMI, Fla. — About 120 Trane 3 and 5-ton fan cooling units and air-cooled refrigeration units are currently being installed at the University of Miami at Coral Gables.

Use of multiple packaged air conditioning units for school air conditioning is believed to be unique, according to the Trane Co.

Increased attendance at the University's summer session developed the need for improved temperature control during summer months, according to Gene Cohen, University of Miami vice president.

Selection of the remote type packaged "Climate Changers" was based on three factors, Trane noted. They were:

1. Need for individual temperature control for each class room so it will not be necessary to operate all units when just a few are in use.
2. Large size of class rooms to be air conditioned ruled out ordinary room type units.
3. Noise reduction to prevent disturbance of classroom activity.

In some cases, ductwork will be added to distribute air to the various areas. In others, units will discharge air directly to the conditioned space.

McDonald Air Conditioning, Inc., here received the contract for the installation.

Gets Church Contract

ROANOKE, Va. — Contract for installation of air conditioning in the First Presbyterian church here was handled by Whitescraver Engineering Co., Inc.

MAIL THIS COUPON TODAY

For literature outlining the opportunity now open to make bigger profits selling Carbonic Dispenser Equipment.

Name_____

Address_____

City_____ State_____

CARBONIC CD DISPENSER INC. CANFIELD, OHIO

West Coast Plant: 16028 S. Marquardt Ave., P.O. Box 142, Norwalk, Calif.
In Canada: General Equipment Corp., Ltd., Toronto, Ont.

Will Air Condition SS Hq. Bldg.

YORK, Pa.—The awarding of a $20,900,000 general contract to McClosky & Co. for the new, completely air conditioned Federal Social Security office building topped-off metropolitan Baltimore's biggest year for office building construction since before World War II, it was reported by York Corp.

As headquarters for the Bureau of Old Age and Survivors Insurance, the center will provide space for some 7,300 Federal employes now working in a dozen or more locations in the city.

Designed by two architectural firms of Myers & Ayers and Fisher, Nes, Campbell & Association, of Baltimore, the largest of the structures will be a 10-story administration building, while two other buildings, four and five stories, respectively, are linked by another 106-ft. long four-story structure.

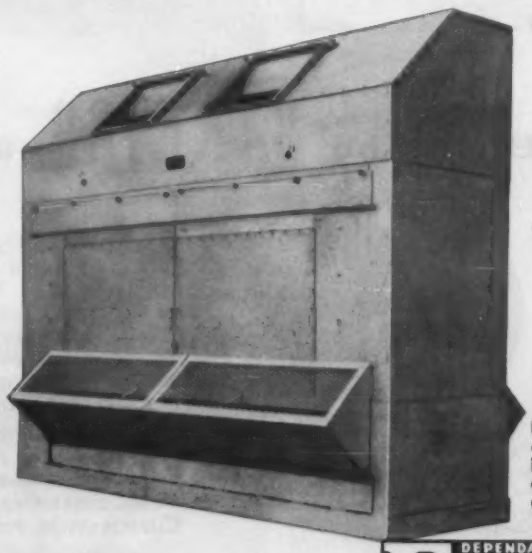
Completely air conditioned by Lloyd E. Mitchell Co. of Baltimore using a York Induction System employing 1,700 individual room units and six separate water chilling systems, most of the floors in the office center will have movable walls so that room sizes can be changed to meet the ever increasing use of electronic business machines.

17 Cool Floors

NEW YORK CITY — A 17-story air conditioned office building is under construction at 125 Maiden Lane.

Initial occupancy of the $10,000,000 building is anticipated around May of 1959. U. S. Life Insurance Co. has taken more than 40% of the building's 250,000 sq. ft. of rentable space.

SAVE FIVE WAYS WITH FRICK
EVAPORATIVE CONDENSERS



• **WATER**
Evaporative condensers take advantage of the heat absorbed in the evaporation of water—saving water and power to pump it.

• **LABOR**
Superior design and better materials (galvanized throughout) make Frick condensers more efficient and easier to maintain.

• **TIME**
Frick - Mollenberg controls are automatic — save time and keep condenser operating steadily in all kinds of weather.

• **POWER**
Ample cooling surfaces and conservative ratings enable Frick condensers to lower the condenser pressure and temperature and save power.

• **MONEY**
Reasonably priced and far more durable, they are economical to own and operate. A stock item, they are available for immediate shipment.

Frick Company manufactures a complete line of air conditioning and refrigerating equipment, designed for your individual requirements.

WRITE FOR YOUR FREE COPY OF THE NEW BULLETIN 234 TODAY

DEPENDABLE REFRIGERATION SINCE 1882
FRICK CO.
WAYNESBORO, PENNA., U.S.A.

Locate Leaks The Easy Way

With General Electric's new and complete line of leak detectors

G.E.'s versatile, Type H halogen leak detectors locate leaks quickly and accurately in any system or component under pressure or vacuum. They are easier to use and much more sensitive than ordinary methods of leak detection.

(A) Standard control unit is used with any one of the following detectors: (B) gun detector, (C) stationary detector, (D) vacuum detector, (E) pencil-probe detector.

For more information write for Leak Detector Bulletin GEA-6817. Section 585-67, General Electric Company, Schenectady, N. Y.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Contractor Offers 10-Point Summer Clean-Up Special

OAK PARK, Mich. — Direct mail promotion offered this year by T. H. Brehm Co., Inc., local heating and air conditioning contractor, gives customers a 10-point summer clean-up special program.

"An ounce of prevention is worth a pound of cure," the letter states.

Quoting prices for work to be done on oil-fired or gas-fired furnaces during April, May-June-July, and August, the firm's 10-point plan would: clean and adjust thermostat; clean blower compartment; oil all bearings; inspect and adjust fan belt, pulleys, and bearings; clean burner nozzle and adjust electrodes; clean combustion chamber if needed; check combustion efficiency; check and adjust all safety controls; adjust humidifier; and repair all oil leaks.

Complete Check Tests of Baseboards For Which Ratings Have Been In Effect

NEW YORK CITY—The Institute of Boiler and Radiator Manufacturers has completed check tests at the I-B-R Laboratory at Urbana, Ill., of baseboards for which I-B-R ratings have heretofore been in effect.

The I-B-R rating procedure for baseboard radiation was initiated in 1950.

"The first edition of the testing and rating code provided for determining steam ratings by laboratory test, with water ratings determined by applying factors to the steam outputs," the I-B-R announcement pointed out.

"Since the issuance of the first edition, two major revisions of the code have been adopted, in order to assure maximum precision in I-B-R ratings.

"The first revision was made in 1952 when the procedures for testing for water outputs were incorporated.

"The second major revision was written into the Third Edition, effective May 1, 1957. That edition provides that I-B-R ratings, as determined in the manufacturer's laboratory, or a laboratory selected by him, be affirmed by check tests at the I-B-R Laboratory, built with institute funds, at Urbana, Ill.

"This check testing has been applied to all baseboards for which I-B-R ratings were in existence when the Third Edition became effective and those for which ratings have subsequently been approved.

"Baseboards that have passed, or been established under, the check testing procedure as of June 16, 1958 have been announced by the institute. I-B-R ratings for all other baseboards, which were at any time previously in existence, have either been withdrawn by the manufacturer because of revisions in his baseboard line, or been withdrawn and terminated by the institute effective not latter than May 31, 1958.

"Additional I-B-R ratings, approved from time to time in the future, will be issued only after compliance with the check testing provisions of the Third Edition of the code.

"I-B-R ratings are issued for various average water temperatures ranging from 150° F. to 240° F.; also, for steam, if requested by the manufacturer."

Inquiries regarding I-B-R baseboard ratings should be addressed to the institute, 608 Fifth Ave., New York 20, N. Y.

Inland Empire League Pushes Electric Heating

SPOKANE, Wash. — A sales campaign to promote electric home heating is currently being conducted by the Inland Empire Electrical League.

Six daily and 36 weekly newspapers have been carrying weekly or bi-weekly advertisements telling the advantages of installing electric heat now.

Highlight of the campaign is a consumer contest offering a free five-day, all-expense trip to Hawaii for two via Northwest Orient Airlines.

Toledo School To Get All-Electric Heating

TOLEDO—A local consulting engineering firm has been retained to design an all-electric heating system for a new elementary school in Newton Falls, Ohio. Meckler Engineering Co. says this will be the first such system in northern Ohio.

LeValley McLeod Holds Open House At Binghamton Office, Warehouse

BINGHAMTON, N. Y. — An "Open House" and suppliers' exhibition of products marked the formal opening of the new Binghamton office and warehouse of LeValley McLeod, Inc., distributor of plumbing and heating equipment and other products.

About 900 area customers and friends attended the two-day celebration, according to Frank F. Merville, vice president in charge of the Binghamton branch, and 52 exhibit booths were used by suppliers to show product lines. There were 91 suppliers' representatives on hand and 41 LeValley McLeod personnel, including company officers and other branch managers.

A carefully planned promotion program included an announcement letter about two weeks in advance followed by a formal invitation and R.S.V.P. card, then a follow-up postcard reminder and individual phone calls the day before the show, according to the announcement.

Sunwarm, Inc. Expands

KINGSPORT, Tenn. — Sunwarm, Inc., manufacturer of electric heaters and heating cable, is currently expanding its sales organization to move into Texas, Mississippi, Louisiana, Georgia, Pennsylvania, and the northeastern states, L. B. Close, vice president, has announced.

. . . with temperature scales for
Refrigerant -12 and -22

The finest testing instruments have been made still better. Pictured are the new models of Marsh pressure and compound testing gauges . . . with two scales in color showing corresponding temperatures of Refrigerant 12 and 22 . . . with greater pressure ranges in both gauges.

In the Compound gauge, the important retard scale has been increased to read from 0 to 80 lbs., and maximum reading is increased to 250 lbs. The range of the pressure gauge has also been increased . . . to 400 lbs.

Their precision bronze-bushed movements give them the remarkable accuracy of 1% of reading. Like their distinguished predecessors, they have the handsome, highly-polished brass cases with sparkling beveled-glass crystals. Threaded rings make it easy to remove the crystal, giving instant access to the Marsh "Recalibrator"—quickest and best way to maintain the high degree of accuracy vital to testing. Gauges are standard with ¼" N.P.T. male bottom connection with restriction screw in connection. Dial size, 2½".

No servicing kit is complete without this testing set. Write for details or *SEE YOUR JOBBER*

MARSH INSTRUMENT CO. SALES AFFILIATE OF JAS. P. MARSH CORPORATION
Dept. D , Skokie, Ill.
Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103rd St., Edmonton, Alberta

MARSH Refrigeration Instruments

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

Mr. Serviceman:
NOW FINISH YOUR SEALING AND CAULKING JOBS FASTER, BETTER, MORE ECONOMICALLY THAN EVER BEFORE!
use
Mortite Caulking Cord
Mortite Caulking Gum
sturdily packaged in handy "tool-kit" size
Lower cost Mortite White Caulking Cord contains three 16-foot rolls, fits any tool kit; 3/16" rope-like cords stay permanently pliable.
Lower cost Mortite White Caulking Gum hand molds into beads, wads, gaskets . . . any shape. Comes in solid one pound slug.
These two sealers, designed by refrigeration servicemen, are perfect for 1001 different jobs:
• Sealing windows, extension wings and openings around window air conditioners
• Sealing breaker strips and joints in air ducts
• Sealing latch and hinge plates, tube entries and cabinet bases
Mail coupon for full information
J-W Mortell COMPANY
Makers of Famous NoDrip Tape and Mortite
J. W. Mortell Co.
520 Burch St., Kankakee, Ill.
O.K.! Send me full information about the complete line of Mortell refrigeration products.
I'm a ☐ Jobber ☐ Dealer ☐ Serviceman
NAME
ADDRESS
CITY STATE

HI-DRI THE LOWEST PRICED ALL-BRASS DRYER BEATS ALL COMPETITION

- All Brass Shell and Fittings.
- 100% Guarantee.
- Individually Boxed.
- Rated Under ARI Standard 710.
- Filled with Davison's PA-400 Silica Gel.
- All Solder Connections made with Easy-Flo 45 Silver Solder.
- Extra Large Hexes.
- U. L. Approved.

ALSO AVAILABLE WITH YOUR PRIVATE BRAND LABEL.
FOR INFORMATION AND PRICES CONTACT
WABASH CORPORATION 2300 S. WESTERN AVE. CHICAGO 8, ILL.

Air Distribution Requirements In Year-Round Air Conditioning

Part 2-Fundamentals of Air Handling

By Frank D. Klein, Chief Engineer, Governair Corp.

In all combinations of ductwork and fans, comprising a whole system, it is important then to delegate such effects to each of these two, classifying the fan effect as that which *maintains* the flow of air and the distributor (or duct) effect being that through which flow is maintained.

Regardless of the arrangement and complications of the system, the air atmosphere at the point of induction into the system, enters at zero velocity and in turn is discharged into an atmosphere where the velocity once again becomes zero. Thus all calculations and measurements of the various effects, such as Losses, are those attributable to the system itself.

In general, ductwork, as the distributor, is designed on two basis, (1) that of equal friction and (2) velocity.

Ducts designed on equal friction, are based on the maintenance of a constant loss in friction per unit length. Most common is that of .08 in. WG per 100 ft. Thus total loss due to friction is merely the function of multiplication based on the total number of feet involved.

Pressure losses in ducts designed for equal friction loss per unit length is in direct relationship to the tolerable velocity. Refer to the previous text material on *initial velocity output* of the fan at discharge and design the initial receiving area of this velocity to handle the Cubic Feet of Air produced at rates consistent with acceptable noise levels. Dependent on the area of installation the average range of tolerable duct velocities allocates itself between 1,000 and 1,800 f.p.m.

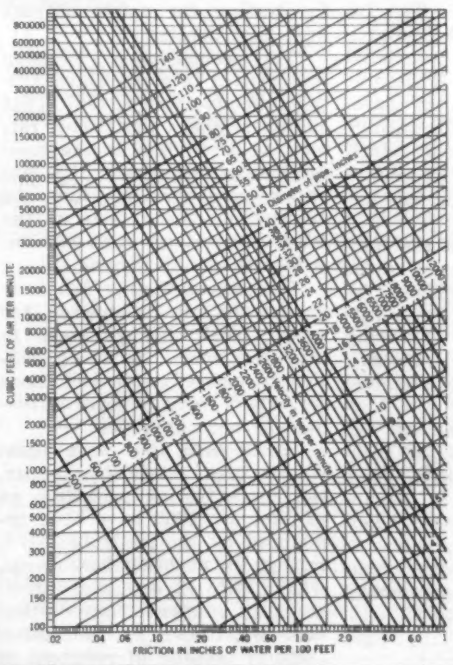


FIG. 26 indicates friction in inches of water per 100 ft., cubic feet of air per minute, and velocity in feet per minute.

The chart shown in Fig. 26 indicates (1) friction, in inches of water per 100 ft.; (2) cubic feet of air per minute (c.f.m.); and velocity in feet per minute. Using as an example 4,000 c.f.m. of air to be handled, and ductwork designed on .08 in. of water per 100 ft., the initial velocity to be considered would be slightly over 1,400 f.p.m., well within the range of good practice.

Selecting the same amount of c.f.m., but increasing the friction loss to .19 in. of water per 100 ft., would increase the velocity to 2,000 f.p.m., which is out of the range of good design practice. Furthermore, by using a *constant* for friction, as the quantity of air handled increases or decreases, the velocity follows.

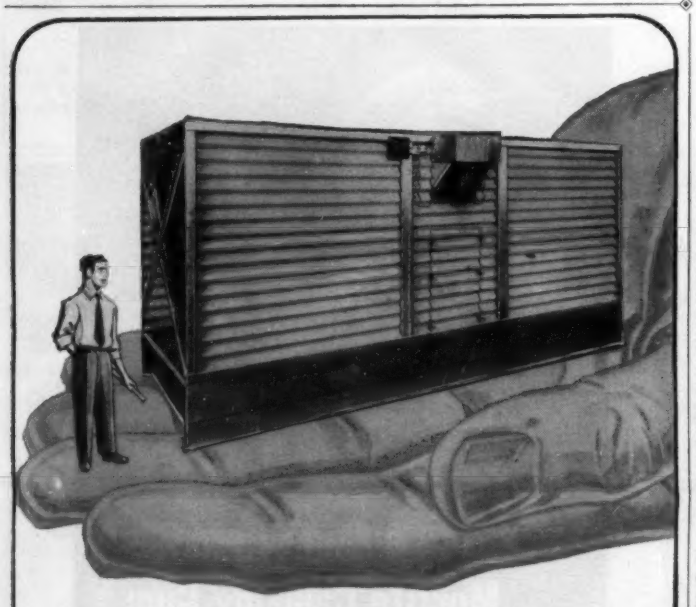
Ductwork designed on a velocity basis, on the other hand, are designed with definite velocities for various sections in mind. The highest velocity is of course at that point where the fan originally discharges; velocities then are assigned down the trunkline of the system by selecting the size duct comparable to the velocity required.

Contrary to above it is then possible to determine, after sizing, what the friction loss will be in the various sections, from the chart in Fig. 26. The total loss then becomes that of addition for all sections involved.

Actually though there exists the two methods, it is rare to find a system designed in which each have not been employed to one extent or another. In those systems in which the Equal Friction basis has been employed, control must come from a wide use of dampers to accomplish balance of entire system.

Those systems employing the velocity method, though requiring special effects dampers, accomplish their control by the pre-selection of the areas and velocities by which the air is to be handled.

(To Be Continued)



V-100 with corrugated cement asbestos board casing

One COOLING TOWER Stands Out...

Havens "V" series

80 to 600 Tons

- Low Silhouette
- All Steel hot-dipped galvanized AFTER fabrication
- Choice of corrugated cement asbestos board (transite) or hot dipped galvanized steel casings.
- Havens cooling tower bearing cuts maintenance costs.
- "V" series models, 80 to 150 tons shipped assembled. Large models shipped in assembled sections.

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Noise In Consumer Products To Be Topic At Oct. 9-10 Meeting

CHICAGO—Reduction or elimination of noise in manufactured consumer products and appliances will be abong major problems to be considered at the 9th annual National Noise Abatement Symposium to be held here on Oct. 9 and 10.

The meeting, to be held at the Hotel Sherman, is sponsored by Armour Research Foundation of Illinois Institute of Technology in conjunction with a number of professional associations. Twelve or more papers will be offered by specialists.

Inquiries concerning the symposium should be sent to Hale J. Sabine, physics research department, Armour Research Foundation, 10 W. 35th St., Chicago 16, Ill.

EMPLOYING a principle of refrigeration through electric current and with no moving parts, this hostess cart which has separate compartments which refrigerate and heat is one of two new demonstration products being shown by Westinghouse Electric Corp. The warming oven, maintained at 150°, is at the top and has a capacity of 1.3 cu. ft. At the bottom is a 2-cu. ft. refrigerator. The unit can be operated either plugged into a regular wall circuit or on its own batteries (for use in the yard or on porch or patio).

CHRIS J. WITTING, Westinghouse vice president, consumer products, inspects a new product—a baby bottle warmer—coke cooler—which the firm's portable appliance division introduced this week. The new techniques and materials, used in developing it, bring a principle known to scientists for a century into the realm of practicality and promises to make electronic refrigeration feasible. Here Witting is setting the automatic timer on the device, which keeps the bottle cool until shortly before a pre-selected feeding time, when automatically it begins to heat. When the milk temperature is "just right," an alarm bell rings—and father goes into action. At the right is a model made for use in a car.

Westinghouse Electronic Experiments--

(Concluded from Page 1)

like a refrigerated mixing bowl and kitchen cabinet drawer to complete home air conditioning and heating.

The principle used in creating the heating and cooling cycles is based upon the Peltier effect. The principle, simply stated, is that of passing electricity through junctions of two dissimilar materials, creating heating or cooling, depending on the direction of the current.

The problem has been to find a practical and efficient way to accomplish this, and with a device that would be reasonably compact. A large part of the problem revolves around the discovery or development of the proper dissimilar metals.

A Westinghouse statement said that "previously, less efficient materials used in demonstrations required apparatus as bulky as an ordinary refrigerator compressor to produce one droplet of ice. The new Westinghouse technique requires at least 50% less apparatus than conventional compression methods would need to gain the same results."

The bottle cooler-warmer demonstrated was less than half a cubic foot in size, including its stand and controls.

This device consists of 50 junctions mounted geometrically around an anodized aluminum container. This assembly is surrounded by vertical aluminum fins for air cooling or dissipation of the removed heat.

Thermostatically controlled, the device has an automatic timer mechanism that can be set up to 12 hours in advance. Thus, parents of an infant can set the appliance to cool—a setting that will keep the bottle's contents at 40° F. Approximately 20 minutes before feeding time, the unit automatically switches to warm and in 15 to 20 minutes the bottle's contents are 100° F. and a buzzer sounds.

A second version, designed for use in an automobile and for plugging into the cigarette lighter outlet, also was demonstrated. Less automatic, its temperature is controlled by pushing buttons.

The hostess cart makes its appearance as an enclosed four-wheeled serving cart. It operates either plugged into a regular appliance outlet or on its own batteries. The central portion of the enclosed cart is in effect a small refrigerator with a capacity of 2 cu. ft. The top section is a warming oven with a capacity of 1.3 cu. ft. and maintaining a temperature of 150° F.

Westinghouse officials said that in cooling applications, in addition to the advantage of smaller size, the electronic method is noise and vibration free, simple to control, capable of almost instant temperature change at the junctions, and reversible so that the same current that produces cold can produce usable heat for cooling and heating.

Also significant, said Vice President Witting, is the fact that the thermoelectric device makes it possible to produce completely new products. Some of those proposed include: a combination electric heating and cooling pad or blanket; refrigerated mixing bowl; portable refrigerator; electric thermos bottles; cooling coasters; photo developing trays; water coolers; cooler drawers for storing vegetables and other foods; frozen storage drawers and cabinets; moth-proof drawers and closets for furs and woolens; freezer-cooker and others. If and when thermoelectric cooling replaces the current type of cold-making mechanisms, Witting foresees what we now know as a refrigerator broken into components of various types of cold storage drawers, cabinets, and closets around the kitchen and other rooms, wherever their particular function is required.

Houston Library Cooling May Bring Surge of Users

HOUSTON, Texas—Air conditioning of the Houston Public Library and of five branches, recently completed, is expected to bring a surge of increased use of these important public facilities.

The three-story central library has been air conditioned at a cost of about $125,000. Five branch libraries have been air conditioned as part of the same project, at an aggregate cost of $95,000.

"It's a mighty welcome switch for students, researchers, librarians, and just plain browsers," commented *The Houston Chronicle*.

Wichita Firms Report Drop In Cooling Sales

WICHITA, Kan.—A 9% drop in sales of central air conditioners and a 22% drop in room cooler sales for April as compared with April, 1957, was reported by dealers in the territory served by the Kansas Gas & Electric Co.

Fourteen dealers sold 60 central air conditioners and 61 sold 291 room air conditioners in April, the utility reported.

For the first four months of 1958, these dealers sold 142 central air conditioners, a 14% drop from last year, and 640 room units, a decline of 17%.

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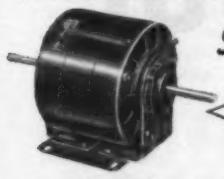

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It will pay you to consider the Vilter line of ammonia refrigeration equipment for your area. High sales potential. Good profits. For distributors interested in the entire Vilter line there is a full Freon compressor line plus air conditioning equipment. Don't wait! Get acquainted now.

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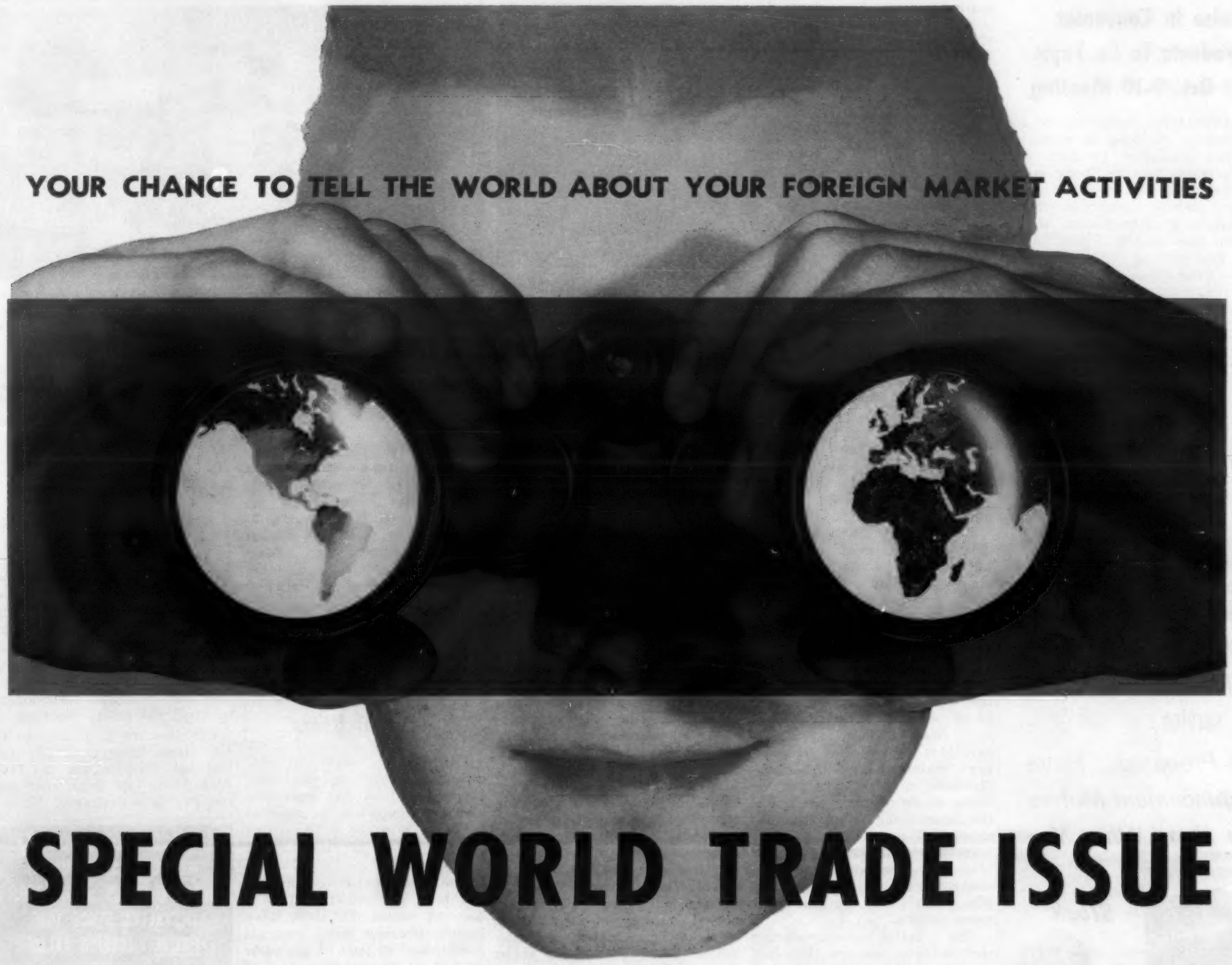

SPECIAL WORLD TRADE ISSUE

A COMPREHENSIVE PICTURE OF THE CURRENT WORLD MARKETS

AIR CONDITIONING & REFRIGERATION NEWS announces a Special World Trade Issue reporting on the current world market for air conditioning and refrigeration equipment.

This issue will have extra foreign distribution in addition to the regular strong international circulation among buyers of equipment in every major foreign market.

The Special World Trade Issue, to be published August 4, 1958, will include these important editorial features: an analysis of opportunities in world trade; a review of the growth of air conditioning and refrigeration export; a look at the major free-world areas open to profitable export sales; what is being sold *and* who is selling it; *and a comprehensive report by Editor-Publisher George F. Taubeneck on his just-completed tour of world markets.*

Hard-hitting, on-the-spot editorial features such as these plus many others mean that the August 4 issue of the NEWS will be read and referred to time and time again by contractors, dealers, distributors, manufacturers, and wholesalers both here and abroad.

Suggestions for using this issue:

1. Display your foreign plants and personnel.
2. Show your leading export products.
3. Feature your foreign distributors.
4. Outline your export policies.
5. Highlight your export department or division.
6. Call attention to your experience in serving foreign markets.
7. Advertise for additional foreign distributors.
8. Introduce new export products to the market.
9. Support your foreign distributors and dealers.
10. Spotlight specific foreign installations.

If you plan to participate in or are now operating in foreign markets, the NEWS' Special World Trade Issue is an unusual opportunity to promote your activity.

What's more the Special August 4 issue—with *extra* international distribution to "tell the world" your story—is offered at *no increase* in regular advertising rates!

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Refrigeration Problems
And Their Solution
(As Written by Paul Reed)

Electric Solenoid Valves (1)

The one feature that more than any other has made possible the growth and popularity of electric refrigeration, both domestic and commercial, is that it is automatic. It starts and stops itself in accordance with required temperature and humidity conditions, with little or no attention on the part of the user.

Imagine, if you can, refrigeration equipment that had to be started and stopped, and the valves controlled manually.

One of the devices that contribute so much to automatic control is the electric solenoid valve or, as it is sometimes called, the magnetic stop valve. Except for the larger installations on which motor-operated valves are used, the electric solenoid valve is our only means of electrically opening and closing a valve to start or stop the flow of a gas or a liquid, by automatic control.

Most electric solenoid valves used in refrigeration work are the "normally closed" type; that is, the valve is closed when the current is off and is open with the current on; although most manufacturers of solenoid valves also make them in the "normally open" type in which the valve is open when the current is off, and is closed by turning the current on.

ELECTRO-MAGNETS

The electrical coil that operates the solenoid valve is one form of electro-magnet. When we hear the word "electro-magnet," we usually think of a coil of wire wound around a piece of iron. When current is turned on to the coil, "magnetic lines of force" are set up around the coil and through the piece of iron, causing it to become a magnet, with a north pole on one end and a south pole on the other end, and it will attract other pieces of iron or steel near it.

This piece of iron is sometimes called a core or pole-piece. Instead of being made of one chunk of iron, it is usually formed of thin sheets, called laminations, riveted or otherwise held together.

If the electric current is disconnected from the coil, it immediately ceases to be an electro-magnet, and its magnetic lines of force disappear. If the pole-piece or core is made of soft iron, it then ceases to be a magnet, and will no longer attract nor repel another piece of iron as it did when the current flowed through the coil.

If the pole-piece or core is made of steel, it retains much of its magnetism after the current is turned off the coil, and some magnetic lines of force remain around the pole-piece. A piece of steel, once magnetized, remains magnetized; so we say it becomes a "permanent magnet."

In most electrical equipment, iron cores or pole-pieces are made of "magnetic iron," a special grade of soft iron, that loses most of its magnetism when the electric current is disconnected from the coil; for it is usually desirable for an electro-magnet to cease being a magnet when the electric current no longer "energizes" the coil.

AIR-CORE COIL

The solenoid coil is much the same as the electro-magnet described above, except that its center is hollow; that is, it is not wound around an iron core, but instead, an open space is left in place of the iron core. This is sometimes called an air-core coil.

Nevertheless, the magnetic lines of force are set up around the coil and in its open center, when the coil is energized by an electric current. When the current is disconnected from the coil the magnetic lines of force disappear.

If, while the air-core coil is energized, a piece of iron is brought near the coil and within the field of the magnetic lines of force, the iron will be attracted much the same as if the coil had an iron core; but with the addition that the coil will try to pull the piece if iron, not only to the coil but into the center of the coil as well.

If the piece of iron is small enough, it will be pulled into the air core and will be held rigidly there in the middle of the coil. It will be found quite difficult to pull it out as long as the current to the coil is left on.

As soon as the current is turned off from the coil, the piece of iron is released and may be removed easily. In fact, if the coil is mounted so that its air coil is vertical, the piece of iron will drop out of its own weight when the electric current is turned off from the coil.

Essentially, this is the principle of the electric solenoid. The solenoid coil is usually mounted vertically, and the piece of iron, then called the plunger, is mounted partially in and partially out of and below the coil.

When the current to the coil is turned on, the plunger is pulled up into the coil and held there while the current is on. If the bottom of the plunger is formed to a conical point or secured to a similarly shaped rod, it can be a valve needle.

With the plunger drawn up into the solenoid coil, the valve is off its seat and the valve is open. When the current is turned off from the coil, the valve needle drops down on its seat, and the valve is closed.

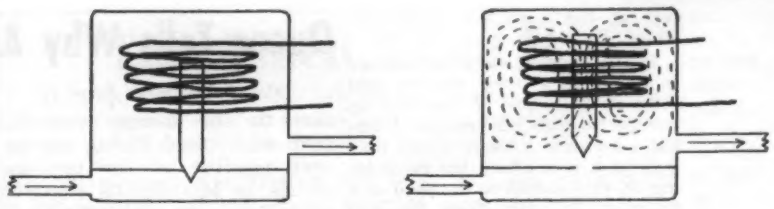

FIG. 1—Schematic drawing of normally closed solenoid valve.

Fig. 1 is a schematic drawing of a rudimentary solenoid valve, showing the essential parts only. In this drawing, the coil is inside the valve and in direct contact with the gas or liquid.

In practice, this type of construction would not often be desirable, for the coil would have to be well insulated against the gas or liquid, especially if it were water. Also, it would mean sealing around the wires to the coil. Moreover, the system would have to be opened if it became necessary to replace the coil.

So the coil is kept out of the

(Continued on next page)

SEAL *the cracks* | **STOP** *the drip* | **END** *condensation*

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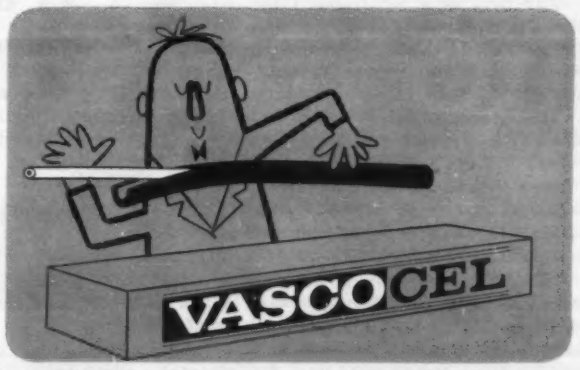

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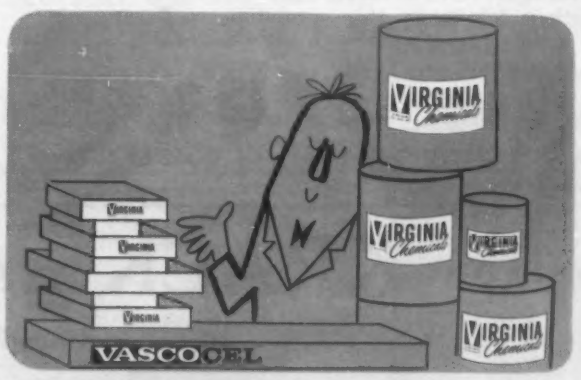

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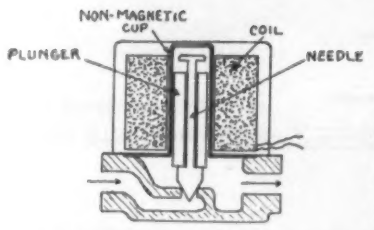


FIG. 2—Cross-section of typical normally closed solenoid valve of the impact-plunger type—Closed position.

Solenoid Valves--

(Continued from preceding page) gas or liquid by providing a small inverted cup over which the coil slips.

This cup must be made of some non-magnetic material such as copper, brass, aluminum, or other non-ferrous metal (iron or steel cannot be used, as the magnetism would not readily pass through an iron or steel cup).

Also, the metal of which the cup is formed should be as thin as possible and still have enough strength to withstand the pressures of the gas or liquid. The less the gap between the coil and plunger, the more power the coil has.

When a valve needle rests on a seat, some effort is required to first get the valve needle off the seat, especially if the difference in pressure on the two sides of the valve is great. However, as soon as the needle is barely off the seat, very little effort is required to merely lift the weight of the needle. It is the breaking of the seal at the seat that takes the effort.

In the solenoid valve, advantage is taken of a very ancient and common principle of building up energy through momentum. Pushing a nail into a board would take a great deal of effort, but by building up momentum in the head of a hammer, we can drive the nail with little effort. Cracking a nut with our fingers is sometimes quite difficult, but building up momentum by hitting the nut with a stone, will crack the nut easily.

Instead of requiring the coil to make a steady pull to get the needle off its seat, a plunger "hammer" is fitted loosely on the needle stem so that the plunger can move an eighth of an inch or so upward before it strikes the stop on the top end of the needle.

When the current is turned on to the coil, the plunger moves freely up the needle and builds up momentum by the time it strikes the stop on the top end of the plunger; then, acting as a hammer, it jerks the needle off the seat. Thus a relatively small coil can open a valve that would require much more power for a steady pull. This construction can be called an "impact plunger."

Moreover, when the current is cut off, the plunger adds its weight to that of the needle when they both fall, which tends to "drive" the needle solidly on to the seat. Thus, a small coil that draws no more than 20 watts can operate a valve with an orifice of as much as ¼ in. diameter, with pressure differences of as much as 150 p.s.i. on the two sides of the valve.

(To Be Continued)

Queer Tells Why ASRE, ASHE Merger Is Being Rushed--

(Concluded from Page 1)

tion to the merger proposal that was voiced during the recent meeting of the two societies in Minneapolis centered around the argument that members were not getting enough time to "give full consideration" to the actual details of the merger plan, it is not considered likely that any efforts will be made to block the balloting on Dec. 1. Any such move would involve some rather complicated legal maneuvers.

Officers of both societies are instructing and urging local sections and chapters to study the merger plan and discuss it at local meetings. The ASRE is planning to put in the hands of each section a copy of the 55-page official report of its committee on the merger, completed just before the opening of the Minneapolis meeting, into the hands of each of its section. ASRE is also planning to prepare a digest of the plan for each member to review. ASHAE is planning to make similar moves.

It is a legal requirement for both societies that the "agreement of consolidation" together with the proposed new by-laws for the new association or society must be submitted to the members "not less than 10 nor more than 40 days" before a scheduled meeting of the existing organization.

Financial Problems Prompt Merger Move

Apparently a major consideration in the merger proposal is the financial problems of the individual societies. The ASRE has been trimming its operating budget, and the finance committee announced that a $5 per member increase in rates is being put into effect. ASHAE reported that it has been operating at a deficit (other than in its research activities) for some time.

At the closing ASHAE session at which the proposed merger was discussed, little opposition was voiced but some questions were asked.

Reviewing the situation to date, President E. R. Queer pointed out that such a merger had been proposed and studied as long ago as 1935 and that the present move had developed out of a "grass roots" campaign by a number of ASHAE chapters.

Other Moves Hinge On Merger Outcome

Anticipating a question that was raised anyway, Queer declared that the seeming haste in bringing the merger plan to a vote was necessary because decisions on important problems faced by ASHAE could not be made until the merger question had been resolved.

"If other decisions are delayed for a year or two, there could be bad effects for as long as five years," he declared.

It has been pretty much agreed, he implied, that ASHAE must relocate its Cleveland research laboratory, but if the merger goes through, research may be expanded, thus requiring increased facilities. Consequently, this decision must be delayed pending the merger vote, he said.

"Non-research activities have been operating at a loss for the past two years," Queer also pointed out.

What to do about this problem will likewise have to wait until the merger question is decided, he explained.

Details of the plan for the proposed merger of the two societies will be in the hands of ASHAE chapter officers by mid-August, Queer promised, and all members will receive a summary of the plan 40 days before Dec. 1, when a special meeting will be held for a vote on the merger question. Voting can be in person or by proxy.

As with ASRE, a two-thirds majority of those voting will be required for adoption of the merger plan.

Merger Details May Take 4 Years

Although the consolidation of the two societies following a favorable vote by both groups could take place "one day following the ASHAE annual meeting in Philadelphia next January," Queer said that complete merger in all details could require as much as three or four years.

"If the merger is not approved in the Dec. 1 vote, ASHAE will proceed on its own to solve the problems now confronting it," Queer declared.

Despite Queer's explanation of why the merger vote was being hurried, one ASHAE member at the meeting declared that "many of us feel we're being 'railroaded' on this vote, that we aren't being given sufficient time to discuss it."

How About Local Chapters?

A question was raised by another member as to whether merger of the two societies at the national level would also require merger of local chapters.

"Yes" was Queer's answer, and he further explained, but without going into any detail, that the merger plan suggests four ways that local chapters of both groups can handle this problem.

One member at the meeting, however, declared that "we should be privileged to hold our own meetings occasionally."

Alco Announces 2 Engineering Advances

ST. LOUIS—Two new engineering advances have been announced by John E. Dube, president of Alco Valve Co., both dealing with the firm's line of "Thermo" expansion valves.

The first is a new design for the power assembly, which limits the amount of flexing to which the diaphragm is subjected.

The second is a new remote bulb and well design which, the company claims, "gives a rate of response equal to, and in most cases, better than, the standard gas-charged thermostatic expansion valve."

"The new contour power assembly design has increased diaphragm life up to 10 times over standard power assemblies," the announcement said.

"Basically, the new design limits the amount of travel in a diaphragm and thus limits the extreme flexing experienced when the diaphragm is subjected to high pressures on the underside during hot gas defrost and on reverse cycle installations."

The new design, subjected to laboratory and field tests over the past two years, is now standard on all Alco "T" Series "Thermo" valves and "HTL" Series "Thermo" valves. It is obtainable on larger "T" Series "Thermo" valves on special order.

The new remote bulb and well design "will give more rapid response to temperature changes in the line, thus providing extra quick closing, necessary for both positive protection against liquid 'flood-back' as well as smooth control for optimum system performance," it was stated.

The new "rapid response" remote bulb and well is available on gas-charged valves only, and is said to offer several advantages over older style bulb assemblies.

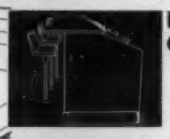
"Among the advantages other than the elimination of the time lag to prevent 'flood-back,' the new remote bulb and well gives better control over a wider range of operating conditions and variable loads, such as experienced with water chillers and hot gas defrost systems," according to the company.

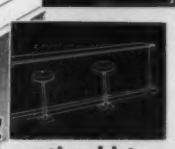
"In addition it will enable package unit manufacturers to select the best possible remote bulb location on compact installations."

here it is . . .

THE FIRST VERSATILE BIG 3 BEVERAGE COOLER

Back Bar


Lunch Counter


Bar

BUILT FOR YOUR NEEDS!

Now . . . for the first time in refrigeration history . . . a three-way Beverage Cooler Box! Use "VERSA-BOX" as a lunch counter . . . a bar . . . or a back bar.

VERSA-BOX GUARANTEES THESE EXTRAS:
NEW EXCLUSIVE TOP COOLING SYSTEM!
LEAK-PROOF CONSTRUCTION
DUAL-USE TOPS! BASE PIECE!

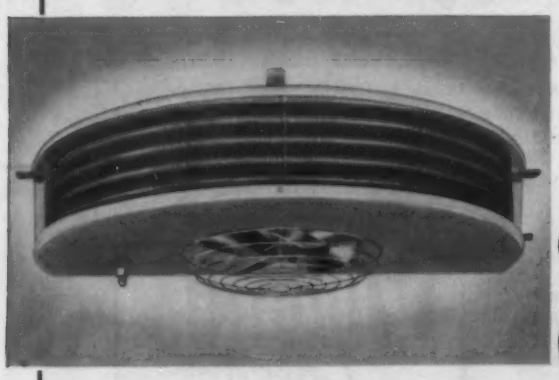
For further details on this revolutionary Beverage Cooler, send for your catalogue sheet today!

DEALERSHIPS INVITED

Beverage COOLERS INC

1711-15 Ruiz Street, Houston 3, Texas

new from KRACK...semi-circular unit cooler



Exclusive circuiting system prevents coil "frost-up"

- Electrostatic air filter on air intake.
- Mounts against wall for more usable storage room.
- Semi-circular discharge gives more even air circulation.
- Has full size built-in heat exchanger.
- Easier to install—suction and liquid line can be taken from either side of the unit.
- Drain pan is hinged for easy access to motor and expansion valve.

KRACK 25th ANNIVERSARY MODEL

New BULLETIN SC-957 gives complete data . . . write or 'phone today!

KRACK REFRIGERATION APPLIANCES, INC.

Only Krack's 25 years of engineering and production experience makes such cooling values possible.

901 W. Lake St., Chicago 7, Ill.
MOnroe 6-1141

7899

Hot July--

(Concluded from Page 1, Col. 5)

above" normal temperatures are predicted for parts of Texas, Oklahoma, New Mexico, and the California coastal region. "Normal" July temperatures is the prediction for most of the other heavily populated areas.

Hot July Might Mean Big Year Like 1955

DETROIT—The "climate" for air conditioning was lousy in June in the northern half of the country and sales of room air conditioners, in particular, were off in that area.

However, with hot weather reaching over most of the country at the start of July, and predictions for warmer weather than usual throughout the month over most of the nation, some observers feel that a good sales year is yet in sight.

They point to the banner year of 1955, when the big spurt came in July. In Chicago, for example, July '55 sales of room units were nearly three times the June figure, which is usually the big month. In that year, the big heat wave came in July.

Cool Civil-Criminal Courts

ATLANTA — Construction has been launched on Fulton County's $1,750,000, four-story Civil-Criminal Court building.

Watchdog Group

(Concluded from Page 1, Col. 2)

job of each member contractor was inspected.

The committee is also authorized to make inspections of complaints to the secretary by members, reports by city building inspectors of so-call "ratty" jobs even though complying with the technical provisions of the city code, jobs culled from building permits, and other jobs as desired by members of the committee.

If substandard work is uncovered, it is then up to the association's board of governors to take remedial action or such disciplinary action as is considered appropriate, according to Smith.

Smith also reported that association members are distributing to customers and prospects a booklet on "facts you should know when you buy air conditioning."

The 11 rules listed, Smith said, closely follow those issued by the National Better Business Bureau some time ago.

7-Up OKs La Crosse Unit

LA CROSSE, Wis.—La Crosse Cooler Co. announced recently that its upright visual selective beverage dispensers have been approved by The Seven-Up Co., St. Louis, for sale to the members of the latter's bottling family.

You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry.

Q. In a chest-type freezer, we had a burned out motor and a pin hole leak in the condenser under the tank, the condenser being located beneath the cabinet and inaccessible without taking out the tank.

Problem: how effectively to clean out the tank coils and condenser — the black sludge which spread through the system. Clean it out effectively the first time, that is.

We used 100 lbs. of Refrigerant-12 to flush out coils and condenser at different times. Each time, the refrigerant would show clean, but several days later, when the system had operated for a while, we had no freezing and a 30-in. vacuum and 120-lb. head. And another flush would show more black sludge.

It is planned, along with the compressor change, to install a new capillary-suction-liquid line assembly, but we would like to be sure that the system is completely clean before we go ahead.

M. R.—Gueydan, La.

A. Very much has been said and written about the general subject of cleaning up a unit after a burnout. People like John H. Spence, service manager of Hussmann Refrigeration, Inc. and educational director of RSES, report that the question has been repeatedly discussed at regional and national educational meetings.

Ansul Chemical Co. has published an article on the subject in the January, 1958 edition of its *News Notes*.

Getting the job done the *first* time is apparently a matter of taking enough time to do a thorough cleaning. By far most servicemen take one or more shortcuts which reduce the effectiveness of the cleaning job.

Mineral spirits, Refrigerants-11, 12, 22, 114, have all been used for flushing out black carbon and resinous matter which occurs after a burnout. Flushing coils, condensers, and receivers is recommended.

Original flushing should be followed by a flush with clean, dry refrigerant — preferably passed through a drier.

At this point, some authorities suggest—in fact insist on —a triple evacuation of the system before charging. This is after the new compressor has been put in place, of course. Others do not consider triple evacuation necessary.

Then a refillable-type filter-strainer-drier should be installed in the liquid line—a drier two to three times bigger than would normally go on the unit.

After the system is back in operation, Spence recommends watching the oil coloration. After a week or 10 days, the oil should be as clear as when put in. If it is, check again after 40 or 45 days of operation.

If, at any time, the oil discolors, it indicates that not all contaminants were removed, and it may require another cleaning to prevent fouling up or even another burnout.

John Bopp, Ansul Chemical Co., warns that the point of worse contamination will likely be the condenser. "Pay special attention to cleaning out the condenser; it may even have to be replaced," he says.

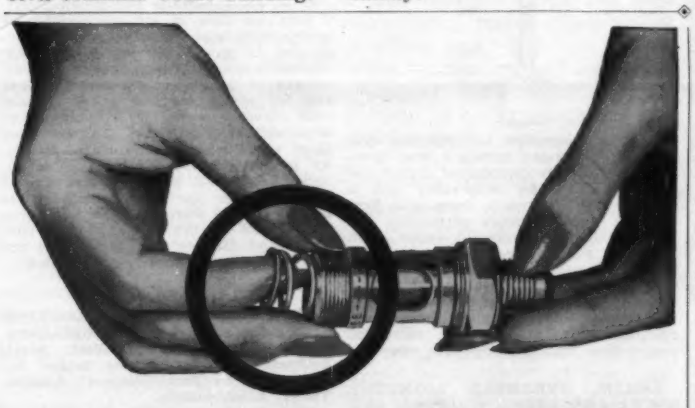
Bopp also recommends the installation of a low-side filter-drier for 24-48 hours to prevent material which is flushed free during operation from traveling to the high side and plugging up the capillary again.

After clean-up, the suction side drier should be removed, Bopp pointed out.

Get your copy

Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each.

Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.



SHE'S PUTTING SPRINGS IN
E-Z-SEE LIQUID INDICATORS

To you, E-Z-See liquid indicators with spring compensated gaskets mean NO LEAKS—with Refrigerant 12 or Refrigerant 22—at operating pressures through 500 p.s.i. and operating temperatures up to 200° F. and down to minus 40° F!

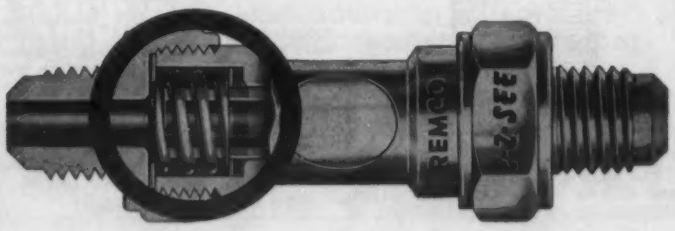
Double port, easy to see through, spring compensated E-Z-Sees are available with male flare x male flare, male flare x female flare and with extended sweat connections which permit soft or silver soldering without disassembly.

E-Z-Sees are also available with a very sensitive FLO indicator flap directly in the refrigerant stream. With this sensitive flap all variations in flow are instantly indicated.

The full story is given in Bulletin R-11. Write today for your copy.

AVAILABLE TO THE TRADE THRU WHOLESALERS

REMCO INC.
ZELIENOPLE, PA.



Edwards Airvec Supplies 90 Tons Of Air Conditioning To New Bowling Center*

EDWARDS Airvec Condenser Utilizes Convection Principle.
Eliminates Noise, Motors, Maintenance, Structural Problems.

Heat rising from the horizontal condenser creates a chimney-like draft that continues to draw fresh air through the unit. Manufactured in 2, 3, 5, and 7½ ton basic sections, which then can be assembled in multi-sections for unlimited capacities up to hundreds of tons.

This principle eliminates: Noise, Motors, Wiring, Maintenance, Operating Problems. WRITE Airvec Dept.

Edwards Engineering Corp. Manufacturers Agents Inquiries Invited.

CO-AXIAL FREON CONDENSERS

- COST REDUCED 30% to 40%
- CONDENSER WATER REDUCED 35%
- Refrigerant Charge Reduced
- Stabilizes Capillary Performance
- Smaller Cooling Towers Required
- Shipping Weight Reduced
- Many Shapes and Sizes Available
- Sea Water Models Available

EDWARDS ENGINEERING CORP.
103 ALEXANDER AVENUE • POMPTON PLAINS, NEW JERSEY

*Installation at the T-Bowl Bowling Lanes, Hamburg Turnpike, Wayne, New Jersey

OVER-VOLTAGE CAUSES HOT-RUNNING MOTORS

LOW VOLTAGE RESULTS IN LOST MOTOR TORQUE

Correct Off-Standard Line Voltage with Acme Electric Buck & Boost Transformers

Check the supply line voltage, and if it does not match the normal voltage of the motor—install a buck and boost transformer to correct the over-voltage or under-voltage condition.

Remember these basic points: When motors operate on a line voltage in excess of nominal rating, operating temperature increases often to the danger point. When motors operate under low voltage conditions, necessary torque, to adequately handle the load, is lost. Motors labor to carry the load, overheat and burn-out.

These common conditions can be corrected with Acme Electric Buck and Boost transformers which permit modification of voltage by 5%, 6⅔%, 10%, 13⅓%, 20% or 26⅔%.

Definitely the most inexpensive way to correct an off-standard voltage condition. Write for catalog and prices.

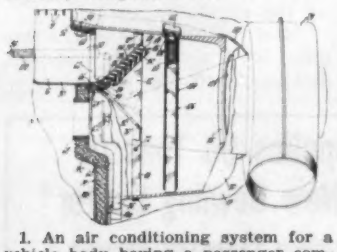
ACME ELECTRIC CORPORATION
9127 WATER STREET • CUBA, NEW YORK

Acme ACME Electric
TRANSFORMERS

PATENTS

Weeks of April 22 & 29

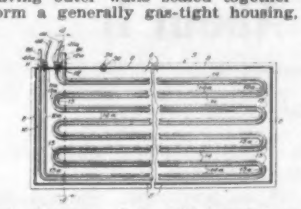
2,831,327. VEHICLE AIR CONDITIONING SYSTEMS. William J. de Beaubien, Birmingham, and Herman S. Kaiser, Pontiac, Mich., and John R. Holmes, Lockport, N. Y.



1. An air conditioning system for a vehicle body having a passenger compartment, a fire wall, a windshield and a vehicle body chamber located forwardly of said windshield and extending rearwardly from said fire wall to receive outside air, said system including a casing forward of said body chamber and cooperating with an upper portion of said fire wall to define an air supply chamber. . . .

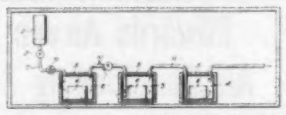
2,831,328. PLATES AND SYSTEMS FOR MULTIPLE REFRIGERANTS. Herman W. Kleist, Hollywood, Ill., assignor to Dole Refrigerating Co., Chicago.

1. For use in a refrigeration system for vehicles and the like, said vehicle having means thereon for cycling a volatile refrigerant, the improvement comprising an evaporator plate adapted to be mounted in said vehicle and having outer walls sealed together to form a generally gas-tight housing, a



first sinuous coil in said housing constructed to be connected in circuit with said volatile refrigerant cycling means. . . .

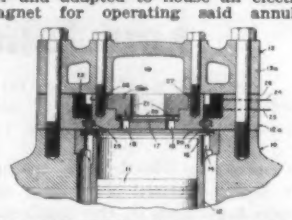
2,831,329. METHOD OF FREEZING FOODSTUFFS AND THE LIKE. Willard L. Morrison, Lake Forest, Ill., assignor to The Union Stock Yard and Transit Co. of Chicago.



1. The method of freezing foodstuffs and the like which consists in assembling the material to be frozen in a plurality of gas and liquid tight portable shipping container chambers connected in series, depositing a predetermined quantity of cold boiling liquid in heat exchange relationship with the first chamber in the series. . . .

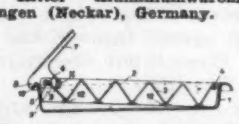
2,831,625. UNLOADER FOR COMPRESSOR. George W. Hartwell and Herbert E. Linder, South Hadley, Mass., assignors to Worthington Corp., Harrison, N. J.

1. In a compressor including at least one compression cylinder, a piston disposed for reciprocating movement in said cylinder, an annular valve in one end of said cylinder adapted to unload the compressor, and a cylinder head disposed on said one end of said cylinder and adapted to house an electromagnet for operating said annular



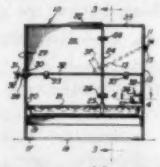
valve, said cylinder head comprising a plate member and a cover member. . . .

2,832,205. ICE TRAY. Karl Pedermann, Hanau, Heinz Claude, Mannheim-Feudenheim, and Richard Ritter and Theophil Pfeffer, Esslingen (Neckar), Germany, assignors to Heinrich Ritter Aluminiumwarenfabrik, Esslingen (Neckar), Germany.



1. For use in an ice tray of a refrigerator or the like, in combination, an elongated partition adapted to be place in an ice tray, said elongated partition having a top edge and a bottom edge; an elongated flexible, resilient corrugated strip extending in a zig-zag path between said top edge and said bottom edge of said partition from one end to the other end thereof, so as to form on the side of said partition a first series of triangular recesses having each its apex adjacent to the bottom edge of said partition and a second series of triangular recesses having each its apex adjacent the top edge of said partition. . . .

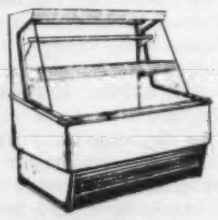
2,832,333. HYPERTENSION COLD METER. William S. Perdon, Birmingham, Ala.



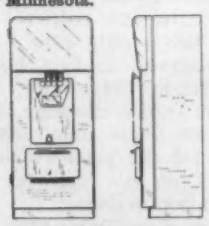
A hypertension cold meter comprising, in combination, a closed cabinet, refrigerating means located within said cabinet comprising a tray and a coolant adapted to be contacted by the hands of a patient when inserted therewithin, temperature indicating means for said refrigerating means mounted externally upon said cabinet including a temperature bulb immersed in said tray. . . .

DESIGNS

182,567. REFRIGERATED DISPLAY CASE. Frederick D. Chapman, Chicago, and Kim Yamasaki, Lombard, Ill., assignors to Hussmann Refrigerator Co., St. Louis, Mo., a corporation of Delaware.

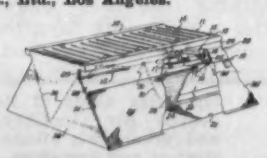


182,588. BEVERAGE VENDING MACHINE. John A. Greenly, Minneapolis, Minn., assignor to Norris Dispensers, Inc., Minneapolis, Minn., a corporation of Minnesota.



Week of May 6

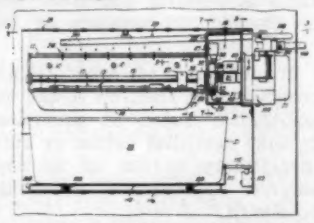
2,833,122. WATER PRE-COOLED HEAT EXCHANGER SYSTEMS. Arthur L. Kohl and Ernest Butcher, Burbank, Calif., assignors to The Fluor Corp., Ltd., Los Angeles.



1. A heat exchanger unit comprising a housing having air inlets at two opposite sides thereof and having an open upper end through which air from the housing may discharge upwardly, a fluid conducting heat exchanger coil positioned in the path of air discharging upwardly through said upper opening. . . .

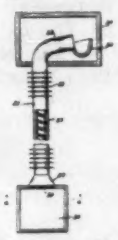
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

2,833,123. AUTOMATIC ICE CUBE MACHINE. George P. Kennedy, Conklin, and Valentine M. Kurent, Muskegon, Mich., assignors to Borg-Warner Corp., Chicago.



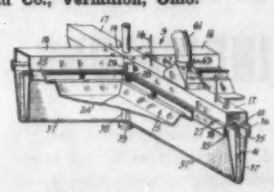
1. In an ice making machine, a tray, a grid structure disposed within said tray and composed of relatively movable plates for dividing frozen material contained within the tray into blocks, said grid structure being rotatable relative to the tray, a first power means associated with the grid structure for moving the plates relative to one another and effective to loosen the blocks while said grid structure is disposed within said tray, a second power means connected to the grid structure and means operative in response to the operation of the first power means to actuate said second power means to rotate the grid structure with respect to the tray to remove the blocks from the tray.

2,833,125. EVAPORATOR FEED CONTROL. Richard A. Sturley, Kirkville, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



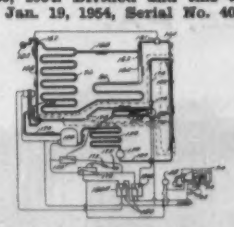
1. In an absorption refrigeration system, an evaporator having a first opening for the introduction of liquid refrigerant into the evaporator and a second opening remote from said first opening, said openings permitting the passage of refrigerant in vapor form from the evaporator, means associated with said second opening, responsive to the presence of unvaporized refrigerant in the evaporator for obstructing the passage of vapor from the second opening thereby creating increased vapor flow through the first opening.

2,833,199. OVERHEAD LIGHTING, SOUND-ABSORBING, HEATING, AND AIR CONDITIONING. George P. Wakefield, Vermilion, Ohio, assignor, by mesne assignments, to The Wakefield Co., Vermilion, Ohio.



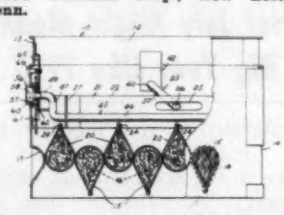
1. A combined ventilating and acoustical device suitable for attachment to the ceiling of a room, said device comprising a hollow elongated casing having an upper imperforate wall, a lower wall, and opposite side walls; a correspondingly elongated body of sound-absorbing material disposed within said casing; said body being of thickness less than the distance between such opposite side walls and of height less than the distance between such upper and lower walls. . . .

2,833,126. ICE MAKING METHOD. Glenn Muffly, Springfield, Ohio. Original application Nov. 14, 1950, Serial No. 195,604, now Patent No. 2,695,502, dated Nov. 30, 1954. Divided and this application Jan. 19, 1954, Serial No. 404,985.



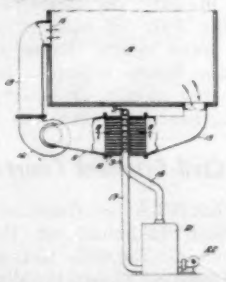
The method of cooling a body of air and holding it within a non-freezing temperature range which consists of evaporating a liquid portion of a volatile fluid in heat exchange with said air after a first portion of said fluid has been evaporated at a sub-freezing temperature for the purpose of freezing a substance, regulating the rate of flow of said liquid and thereby the quantity per unit of time evaporated to cool said air in accordance with temperature changes of said air, stopping the freezing of said substance at a preselected stage thereof. . . .

2,833,200. CONTROL REGISTER FOR AIR CONDITIONING APPARATUS. Edwin Olson and Ernest H. Person, New Britain, Conn., assignors to Allied Thermal Corp., New Britain, Conn.



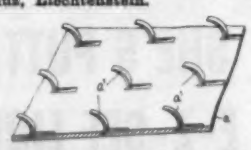
1. In a control register of the type described, a hollow open ended casing, a first set of parallel spaced apart baffles fixed to the casing, a second set of spaced apart baffles respectively interposed between baffles of said first set of baffles and lying in a plane parallel to and movable toward and away from the plane of said first set. . . .

2,833,370. AIR CLEANING AND CONDITIONING BY THERMAL PRECIPITATION. Thomas K. Sherwood, Wellesley Hills, Mass., assignor, by mesne assignments, to Arkla Air Conditioning Corp.



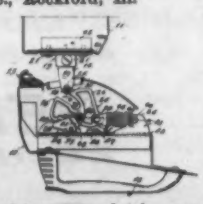
1. In an apparatus for cleaning air, a duct for flow of air, a plurality of interleaved heat transfer surfaces arranged in said duct for flow of air therebetween, and means for heating certain of said heat transfer surfaces and for cooling certain other of said heat transfer surfaces for maintaining alternate of said heat transfer surfaces at different temperatures whereby a temperature gradient is established in the air passing between said heat transfer surfaces, which air is heated by the warmer of said surfaces and cooled by the cooler of said surfaces, and dust or smoke particles are precipitated on the cooler of said surfaces.

2,833,534. HEATING AND COOLING SYSTEMS FOR WALLS, CEILINGS, AND FLOORS. Alfred Wolf, Basel, Switzerland, assignor, by mesne assignments, to Etablissement Alustra, Vaduz, Liechtenstein.



In combination, a large, flat, heat conducting metal element and at least one layer of plaster on one surface of said element, said element having a plurality of bent, splinter-like teeth of substantially uniform width peeled out of said one surface to a depth less than the thickness of said element, said splinter-like teeth having a thickness less than the thickness of said element and extending into said layer of plaster to a point close to the surface of said layer of plaster. . . .

2,833,578. REFRIGERATOR LATCH MECHANISM. William O. Burke, Rockford, Ill., assignor to National Lock Co., Rockford, Ill.



1. Refrigerator latch mechanism mounted on a door and adapted to have latching engagement with a keeper on a refrigerator cabinet when the door is closed, consisting of a supporting housing secured to the door, a latch bolt in said housing, a spring-loaded retainer mounted at one end in one end of said housing for pivotal and longitudinal movement in the housing. . . .

(To Be Continued)

Assistant to Manager SERVICE DEPARTMENT

THE TRANE COMPANY SERVICE MANAGER needs a young assistant, under 35, who has a background in fundamental refrigeration theory and practical experience in large built-up air conditioning systems using reciprocating equipment. He should also have knowledge of pneumatic and electrical control systems. A college engineering degree is preferred.

This man will assist the Service Manager in the following functions: Solution of field service problems, administration of service parts program, preparation of service literature, education of the service organization, and establishment of Trane Service Agencies.

Trane is noted for its strong national service organization. The Service Department which regulates the functions of this organization is located at the home office in La Crosse, Wis.

Send request for interview, including resume and salary requirements, to: Gordon Hassell, Erickson Building, The Trane Company, La Crosse, Wis.

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RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

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ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS AVAILABLE

EXCELLENT OPPORTUNITY top-flight air conditioning and refrigeration engineer for sales development program with industry leader. Must have engineering degree, know equipment application and experience calling on distributors and contractors to franchise; train and develop personnel. Permanent position. Must relocate. Usual benefits. Write BOX A6057, Air Conditioning & Refrigeration News.

ENGINEER — REFRIGERATION — Air Conditioning — Heating. Must be able to engineer and figure all size jobs. Permanent situation with well established Pacific Coast firm in San Francisco Bay area. Give complete details education and experience. BOX A6059, Air Conditioning & Refrigeration News.

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NOTICE: DISTRIBUTORS, dealers, service men, users refrigeration equipment—repair parts available all models Baker ammonia and Freon compressors. We are exclusive Baker export sales office. Manufacturers' export agents refrigeration, air conditioning, and allied equipment. THE KEISER COMPANY, Paul Building, Utica, New York.

WELL KNOWN brand condensing units: Open type (New) ⅓ hp air cooled - less motor $55.00. 1½ hp. water cooled - less motor $144.00. 3 hp. water cooled - less motor $175.00. FOB Chicago, Illinois. Send for bulletins and catalog on money saving refrigeration values: WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

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FOR SALE—Well established commercial, domestic, refrigeration and air conditioning sales-service-repair business. Shop and display building, with nine city lots, on a main street, in fast growing suburb of thirty thousand, just fifteen minutes by freeway from heart of San Diego, California. Business established at same location, fourteen years. Ideal father-son combination. Home available next door to shop. BOX A6060, Air Conditioning & Refrigeration News.

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DEFECTIVE CONTROLS Rebuilt — Thermostats, solenoids, water heater controls — stove thermostats — damper motors and expansion valves tested — painted, packaged — guaranteed one year — at a fraction of the new cost. Write for bulletin. BOX A6058, Air Conditioning & Refrigeration News.

Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

MERCURY (2)

Mercury Div.
Ford Motor Co.
Dearborn, Mich.

Controls

Controls for the 1957 Mercury air conditioner and heater are mounted on the instrument panel. They consist of a toggle switch for controlling operation of the blower and a lever (Fig. 2) which turns the magnetic clutch on or off and controls the setting of the thermostat that cycles the clutch.

Blower toggle switch is part of the heater control cluster. Blower is off when the toggle switch is in center position. High speed blower operation is obtained with the toggle switch in upper position; low speed blower operation with the toggle switch in lower position.

Cooling control lever (Fig. 2) is connected by means of a flexible cable to the Ranco thermostat mounted on top of the evaporator case. The lever moves in a horizontal slot.

When the cooling control lever is in "Off" position at extreme left, the magnetic clutch circuit is de-energized and no cooling is obtained.

Moving the lever to the right energizes the clutch circuit through the thermostat, engaging the clutch and causing the compressor to operate. Maximum cooling is obtained with the lever in extreme right position.

At the point of maximum cooling the thermostat is set to cut out at 30° F. as measured by the remote bulb on the evaporator fins and to cut in at 36° F.

Wiring

Wiring diagram of the 1957 Mercury air conditioning system is shown in Fig. 3.

A schematic layout of the wiring is shown in Fig. 4.

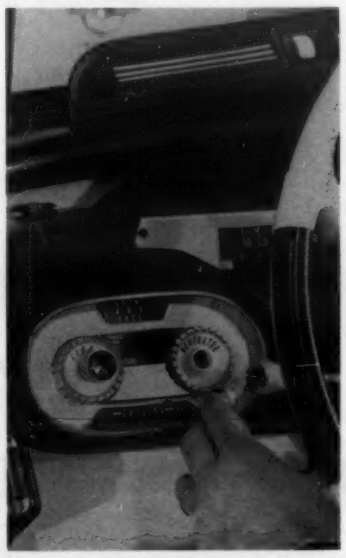

FIG. 2—"Cooling" lever turns clutch on and off and regulates setting of thermostat.

SERVICE HINTS

Evacuating System

Following the initial installation of a system, or after it has been opened to make repairs, the system must be evacuated to remove air and moisture.

Use of a vacuum pump is generally accepted as the best way to evacuate a system, and most experts suggest the double evacuation method.

The system should first be pulled down to approximately 28 in. of vacuum and maintained at that point for 10 to 20 minutes. The vacuum is broken with Refrigerant-12.

At this point the system may be checked for leaks with a halide torch. (A serious leak in the system would have been noted, however, during the initial evacuation because such a leak would prevent the system's being pulled down to 28 in. of vacuum.)

The system should again be evacuated down to 28 in. for another 10 to 20 minutes. It is now ready for charging.

Charging System

Mercury's 1957 system is charged through the low side with refrigerant in the vapor state in the usual manner. Complete charge is 3½ lbs. of Refrigerant-12.

During charging the engine should be operated at fast idle with the cooling system controls set for maximum cooling.

Trouble Chart

Diagnosing service complaints on the 1957 Mercury air conditioner will follow the same pattern of most car units employing a magnetic clutch cycled by a thermostat to control temperature.

The following complaints and probable causes will therefore apply:

Insufficient air velocity.
1. Low fan speed due to faulty wiring or faulty blower.
2. Evaporator and/or heater core clogged.

Hissing noise at coil.
1. Shortage of refrigerant.
2. Restriction in liquid line.
3. Restriction in expansion valve.

Poor cooling or evaporator frosting.
1. Shortage of refrigerant.
2. Liquid line restricted.
3. Expansion valve restricted.
4. Thermostat operating improperly.

No cooling.
1. Liquid line or receiver clogged.
2. Thermostat faulty.
3. Clutch faulty.
4. Lost refrigerant charge.
5. Blower inoperative.

Too cool.
1. Faulty expansion valve.
2. Faulty thermostat.
3. Clutch won't release.

High head pressure.
1. Air in system.
2. Over-charge of refrigerant.
3. Condenser clogged.
4. Engine overheating.

Low head pressure.
1. Shortage of refrigerant.
2. Faulty compressor.

High suction pressure.
1. Faulty compressor.
2. Clutch slipping.
3. Expansion valve bulb loose or improperly located.

Low suction pressure.
1. Liquid line restricted.
2. Evaporator dirty or clogged with ice.
3. Shortage of refrigerant.

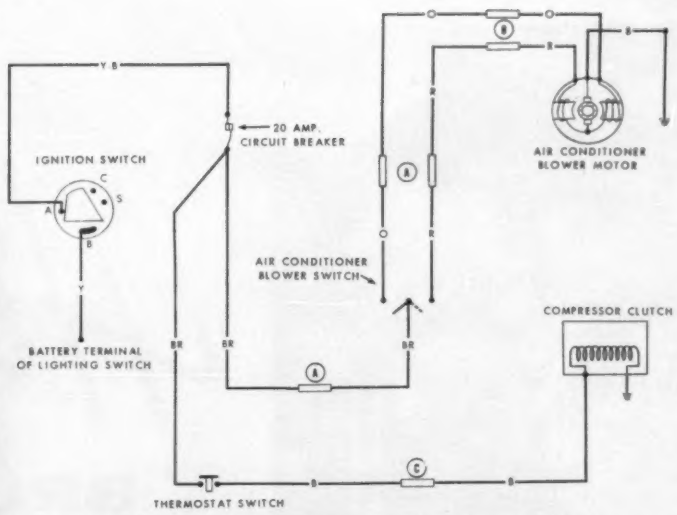

FIG. 3— Wiring diagram of 1957 Mercury air conditioner. Wiring color code: R—red; B—black; BR—brown; O—orange; Y—yellow; Y-B—yellow-black band. Circled letters refer to connectors shown in Fig. 4.

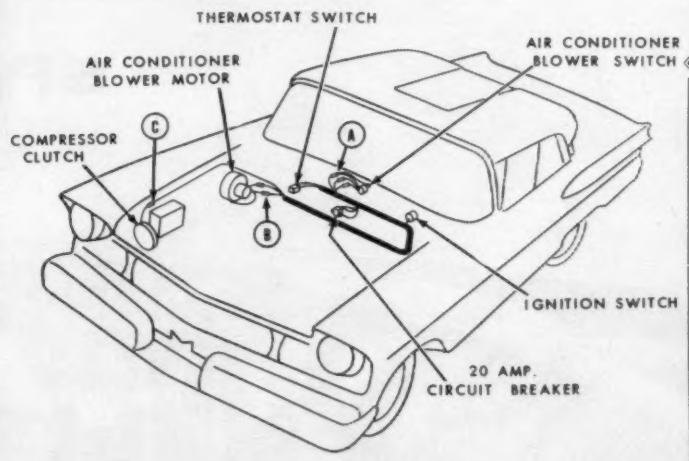

FIG. 4—Schematic wiring diagram of 1957 Mercury conditioner. Circled letters refer to connectors shown in Fig. 3.

G-E Publishes Data On Shaded Pole Motors

SCHENECTADY, N. Y. — General Electric Co. recently issued two new shaded-pole motor publications.

GEA-6134B is a 12-page booklet containing design, dimension, rating, performance, and application data on shaded-pole motors for such applications as window, ventilator, and condenser fans, and other items. This two-color bulletin includes information on G-E's new "slim" motor that is claimed to be 33% lighter in weight than previous models.

GEA-6533A is an eight-page publication which describes "KSP" shaded-pole and "KCP" permanent-split capacitor type fan motors for room air conditioners. Illustrated bulletin covers design, insulation, and lubrication features.

Acme Industries Names Gray & Kilgore, To Introduce New Products In Fall

JACKSON, Mich. — Gray & Kilgore, Inc. of Detroit has been appointed advertising agency for Acme Industries, Inc., manufacturer of air conditioning and refrigeration systems, according to H. W. Smith, Acme's advertising and sales promotion manager.

Smith said Gray & Kilgore and the account supervisor, Robert Kilgore, have the proven abilities in advertising and sales promotion required by Acme's new marketing concept, to properly assist in the selling of the company's complete line of products and systems through a greatly expanded distribution organization.

"This change in agencies is expected to be of even more importance as Acme's newly-developed products are introduced this fall, enabling the company to market complete systems for the home, for business, and for industry instead of supplying just components as in the past."

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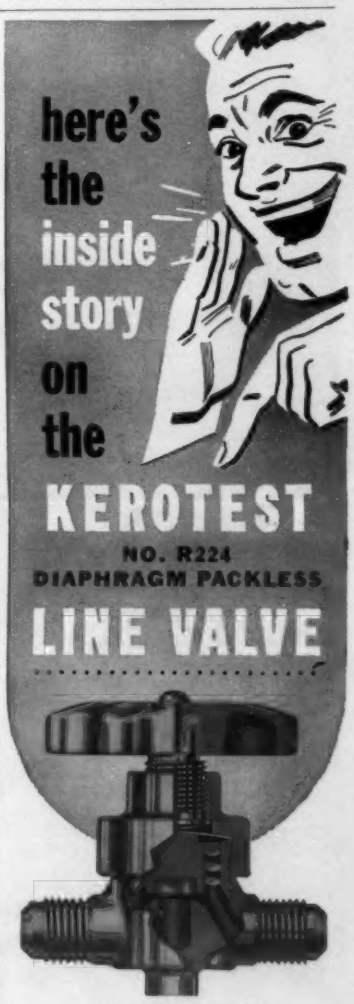

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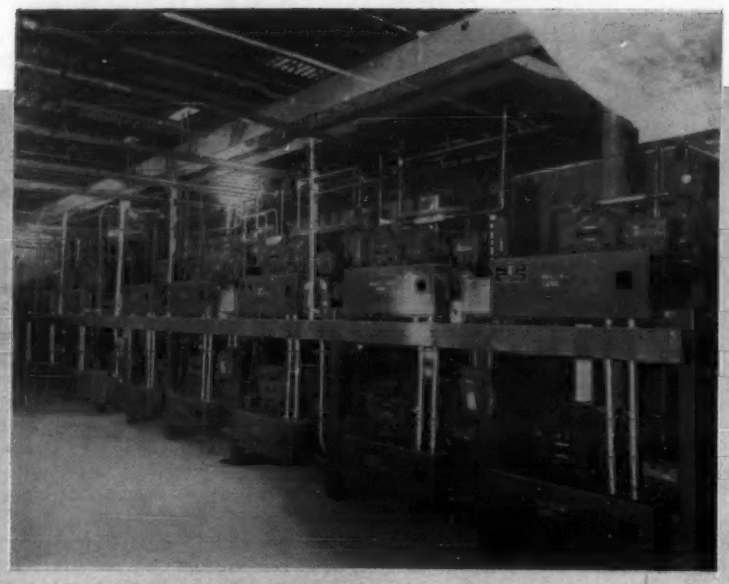

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Brunner-Metics, products of Dunham-Bush, the company that serves supermarkets throughout the nation with high quality equipment for heating, cooling and refrigeration, can "rack-up" important savings for *you*. Write today for complete information.

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